

July 2001



United States Global Change Research Program

**Data and Information Working Group
Subcommittee on Global Change Research**

References Cited in the Foundation Report of the National Assessment of the Potential Consequences of Climate Variability and Change

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The U.S. Global Change Research Program

The U.S. Global Change Research Program was initiated in 1989 as a high-priority effort to address key uncertainties about changes in the Earth system, both natural and human-induced; monitor, understand, and predict global change; and provide a sound scientific basis for national and international decisionmaking on global change issues. Congress codified the USGCRP in the Global Change Research Act of 1990, in order to provide for:

...development and coordination of a comprehensive and integrated United States research program which will assist the Nation and the world to understand, assess, predict, and respond to human-induced and natural processes of global change.

...increasing the overall effectiveness and productivity of Federal global change research efforts.

Since its inception, the USGCRP has been directed toward strengthening research on key scientific issues. The Program has supported research that has led to substantial increases in knowledge, improved predictive understanding, and documented evidence of global environmental change, including major scientific advances in the understanding of stratospheric ozone depletion, the El Niño-Southern Oscillation phenomenon, global climate change, tropical deforestation, and other issues.

The interagency Subcommittee on Global Change Research provides overall direction and executive oversight of the USGCRP. Within this framework, agencies manage and coordinate Federally supported scientific research on global change.

Subcommittee on Global Change Research Participating Agencies and Executive Offices

Department of Agriculture
Department of Commerce
 National Oceanic and Atmospheric Administration
Department of Defense
Department of Energy
Department of Health and Human Services
 National Institutes of Health
Department of the Interior
Department of State
Environmental Protection Agency
National Aeronautics and Space Administration
National Science Foundation
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Office of Management and Budget
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of Climate Variability and Change**

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Foreword

In 1997 the U.S. Global Change Research Program (USGCRP) initiated the National Assessment of the Potential Consequences of Climate Variability and Change to provide greater depth of understanding about the significance of climate variability and change for the United States. In 1998, the USGCRP established the National Assessment Synthesis Team as a Federal advisory committee of experts drawn from governments, universities, industry, and nongovernmental organizations, and charged this group with preparing a national-level report that would summarize current understanding of the national-level implications of climate change and variability.

In addition, the USGCRP initiated new analysis and assessment activities focused on the potential consequences for various regions of the country and for socioeconomic sectors of particular national importance. To ensure that the analysis and synthesis of information would address the most important issues in ways that would be most helpful to those needing the information, the regional and sectoral activities were designed to ensure close interaction with stakeholders with a direct interest in the potential consequences of climate variability and change. Each regional assessment was based at a university in the region under study and the sectoral studies were co-chaired by scientists in the relevant fields at universities and leading government research laboratories.

The report of the National Assessment Synthesis Team, *Climate Change Impacts on the United States: The Potential Consequences of Climate Variability and Change*, was submitted to the Subcommittee on Global Change Research in October 2000, and was forwarded to the President and Congress in November. The report is available to the public on the Web (www.nacc.usgcrp.gov) and has, since its release, been published by Cambridge University Press in two parts—an *Overview* volume and a more detailed *Foundation* volume. The Foundation volume contains extensive citations of the published literature upon which conclusions drawn in both the National Assessment Overview and Foundation volumes are based. The references collectively indicate the broad scope of issues addressed in the National Assessment and identify published sources that the several hundred participants in the assessment activities, from all over the United States, judged to be significant and most relevant.

This present publication makes these references available in a comprehensive, consolidated, and systematic form organized by subject. It was prepared by the USGCRP interagency Data and Information Working Group (DIWG) as part of its overall objective of meeting the need of users for high-quality data and information that can be readily located, accessed, and used. Such DIWG activities have continued uninterrupted since the inception of the USGCRP and over a period of major changes in research, technology, and policy, as well as a very great increase in the volume of global change data and information. (For examples of other DIWG activities see the DIWG Web site, www.globalchange.gov, where this present publication is also available.)

The DIWG is currently made up of representatives from the Departments of Agriculture, Commerce, Defense, Energy, and the Interior, and the Environmental Protection Agency, the National Aeronautics and Space Administration, and the National Science Foundation. The National Academy of Sciences Committee on Geophysical and Environmental Data also participates actively. The chair of the DIWG is elected by its members.

It is expected that the references cited in this report will form a basis for follow-on studies, as well as for a wide range of other uses by educators, decisionmakers, researchers, and the public in enhancing understanding of the relationship between human activities and the changing environment. To help users find the published literature in which they are most interested, the citations have been grouped into subject categories. These categories are listed below, with representative topics that each includes, and are the same as those used for the DIWG's annual USGCRP publication of citations for the newly available global change related agency data sets. Within each category, the literature citations have been sorted by Foundation report chapter to help make clear the context in which the cited publications were used. The categories are:

Agriculture - Crops, Forestry, Livestock, Plants, Soils

Atmosphere - Aerosols, Atmospheric chemistry, Climate, Clouds, Weather

Biosphere - Ecology, Vegetation, Wetlands, Zoology

Carbon - Atmospheric carbon, Ocean carbon, Sequestration, Soil carbon

Cryosphere - Glaciers, Ice, Snow

Geology - Earthquakes, Earth's structure, Gravity, Magnetic fields, Nonrenewable resources, Volcanoes

Human Dimensions - Economic effects, Environmental effects, Human health

Hydrosphere - Groundwater, Precipitation, Surface water, Water quality

Land Surface - Erosion, Land cover, Land type, Land use, Topography

Oceans - Coastal processes, Circulation, Resources, Temperature, Waves

Historical Climate - Historical records, Ice, land, and ocean cores

Solar Physics - Energetic particles, Solar activity, Solar radiation

We hope you find this publication informative and useful. For further information, contact the Data and Information Working Group (Wanda R. Ferrell, Tel. 301-903-0043; or Les Meredith, Tel. 301-286-8830, e-mail les@usra.edu) or the USGCRP Office (Tel. 202-488-8630, e-mail office@usgcrp.gov).

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Agriculture

Scenarios Used in the Report

Scenarios for Climate Variability and Change – Ag.

Darwin, R. F.. World Agriculture and Climate Change: Current Questions. *World Resource Review*, 9, 17-31. 1997.

Vegetation and Biogeochemical Scenarios – Ag.

McLeod, S., and S. W. Running. Comparing Site Quality Indices and Productivity of Ponderosa Pine Stands in Western Montana. *Canadian Journal of Forestry Research*, 18, 346-352. 1988.

Metherall, A. K.. Simulation of Soil Organic Matter Dynamics and Nutrient Cycling in Agroecosystems. *Ph.D. dissertation, Colorado State University, Ft. Collins, Colorado*. 1992.

Hunt, E. R., Jr., and S. W. Running. Simulated Dry Matter Yields for Aspen and Spruce Stands in the North American Boreal Forest, *Canadian Journal of Remote Sensing*, 18, 126-133. 1992.

Nemani, R. R., and S. W. Running. Testing a Theoretical Climate-Soil-Leaf Area Hydrologic Equilibrium of Forests Using Satellite Data and Ecosystem Simulation. *Agriculture and Forest Meteorology*, 44, 245-260. 1989.

Parton, W. J., J. W. B. Stewart, and C. V. Cole. Dynamics of C, N, P, and S in Grassland Soils: A Model. *Biogeochemistry*, 5, 109-131. 1988.

Sanford, R. L., Jr., W. J. Parton, D. S. Ojima, and D. J. Lodge. Hurricane Effects on Soil Organic Matter Dynamics and Forest Production in the Luquillo Experimental Forest, Puerto Rico: Results of Simulation Modeling. *Biotropica*, 23, 364-372. 1991.

Report's Regional Elements of the U.S.

Northeast Region – Ag.

Abler, D. G. and J. S. Shortle. Climate Change and Agriculture in the Mid-Atlantic Region, *Climate Research*, 14, 185-194, 2000.

Iverson, L. R., and A. M. Prasad. Predicting Abundance of 80 Tree Species Following Climate Change in the Eastern United States. *Ecological Monographs*, 68(4), 465-485. 1998.

Powell, D. S., J. L. Faulkner, D. R. Darr, Z. Zhu, and D. W. MacCleery. Forest Resources of the United States, 1992. *USDA Forest Service, 133 pp. (General Tech Report, RM-243)*. 1996.

Report of the Forest Service. Fiscal Year 1998. *USDA Forest Service, Washington, DC*. 1998.

Southeast Region – Ag.

- Abt, R. C., F. W. Cabbage, and G. Pacheco. Forest Resource Assessment Using the Subregional Timber Supply Model (SRTS). *Forest Products Journal*, 50(4), 25-33. 2000.
- Acock, B., V. R. Reddy, H. F. Hodges, D. N. Baker, and J. M. McKinion. Photosynthetic Response of Soybean Canopies to Full-Season Carbon Enrichment. *Agronomy Journal* 77, 942- 47. 1985.
- Allen, L. H., K. J. Boote, J. W. Jones, A. J. Rowland-Bamford, G. Bowes, D. A. Graetz, and K. R. Reddy. Temperature and CO₂ Effects on Rice: 1988. *US Department of Agriculture, Carbon Dioxide Research Division, Washington, DC*. 1989.
- Boyer, W. D.. Regeneration of Natural Longleaf Pine Forest. *Journal of Forestry*, 77, 572-575. 1979.
- Census of Agriculture. *National Agricultural Statistics Service, US Department of Agriculture, Montgomery, Alabama*. 1999.
- Census of Agriculture. *National Agricultural Statistics Service, US Department of Agriculture, Washington, DC*. 1994.
- Census of Agriculture, *National Agricultural Statistics Service, US Department of Agriculture, Washington, DC*. 1996.
- Doyle, T. W.. Modeling Global Change Effects on Coastal Forests. *Vulnerability of Coastal Wetlands in the Southeastern United States: Climate Change Research Results, US Geological Survey, Biological Science Report USGS/BRD/BSR 1998-0002, Lafayette, Louisiana*, pp. 67-80. 1998.
- Eamus, D., and P.G. Jarvis, The Direct Effects of Increases in the Global Atmospheric CO₂ Concentration on Natural and Commercial Temperate Trees and Forests. *Advances in Ecological Research*, 19, 1-55. 1989.
- Global Change and Forest Responses: Theoretical Basis, Projections, and Uncertainties. *National Council of the Paper Industry for Air and Stream Improvement (NCASI), New York, Technical Bulletin No. 690, pp. 11-18*. 1995.
- Harcombe, P. A., R. B. W. Hall, J. S. Glitzenstein, E. S. Cook, P. Krusic, and M. Fulton, Sensitivity of Gulf Coast Forests to Climate Change. *Vulnerability of Coastal Wetlands in the Southeastern United States: Climate Change Research Results, US Geological Survey, Biological Science Report, USGS/BRD/BSR 1998-0002, Lafayette, Louisiana*, pp. 47-67. 1998.
- Jones, J. W., S. S. Jagtap, and K. J. Boote. Climate Change: Implications of Soybean Yield and Management in the USA. *paper presented at the World Soybean Research Conference VI, Chicago, Illinois, August 7, 1999*.

- Legler, D. M., K. J. Bryant, and J. J. O'Brien. Impact of ENSO-Related Climate Anomalies on Crop Yields in the US. *Climatic Change* 42(2), 351-375. 1999.
- McNulty, S. G., J. M. Vose, W. T. Swank, J. D. Aber, and C. A. Federer. Landscape Scale Forest Modeling: Data Base Development, Model Predictions, and Validation Using a GIS. *Climate Research*, 4, 223-231. 1994.
- The South's Fourth Forest: Alternatives for the Future. US Department of Agriculture, Forest Service, Washington DC, Forest Resource Report No. 24, 512 pp. 1998.
- Tsuji, G., G. Hoogenboom, P. Thornton, (Eds.). Understanding Options for Agricultural Production. *Kluwer Academic Publishers*, 399 pp. 1998.
- Williams, K., K. C. Ewel, R. P. Stumpf, F. E. Putz, and T. W. Workman. Sea-Level Rise and Coastal Forest Retreat on the West Coast of Florida. *Ecology*, 80(6), 2045-2063. 1999.

Midwest Region – Ag.

- Andresen, J. A., W. B. Sea, G. Alagarwamy, and H. H. Cheng. National Assessment, Upper Great Lakes Final Report, Agricultural Sector. *US Global Change Research Program*, 10 pp.. 1999.
- Coffin D. P., and W. K. Lauenroth, Transient Responses of North American Grasslands to Changes in Climate. *Climatic Change*, 34, 269-278. 1996.
- Economic Databases Three Growth Projections 1967-2050. *NPA Data Services*, 1424 16th Street, NW, Suite 700, Washington, DC 20036. 1999b
- Garrity, C. M., and J. A. Andresen. Climatological Constraints of a Double-Cropping System in the Upper Great Lakes Region: An Assessment of Risk and Potential. *Paper presented at 1999 Annual Workshop of the US National Assessment: The Potential Consequences of Climate Variability and Change, Atlanta, Georgia, April 12-15. 1999.*
- Izaurrealde, R. C., R. A. Brown, and N. J. Rosenberg. US Regional Agricultural Production in 2030 and 2095: Response to CO₂ Fertilization and Hadley Climate Model (HADCM2) Projections of Greenhouse-Forced Climatic Change. *Pacific Northwest National Laboratories, Richland, Washington, Rep. No. PNNL-12252*, 42 pp.. 1999.
- Rowntree. Quantifying Urban Forest Structure, Function, and Value: The Chicago Urban Forest Climate Project. *Urban Ecosystems*, 1(1), 49-61. 1997.
- Wargo, P.M., D. R. Houston, L. A. LaMadeleine. Oak Decline. *Forest Insect & Disease Leaflet 165*, US Department of Agriculture, Forest Service, 8 pp.. 1983.
- Wolfe, D. W.. Potential Climate Change Impacts on New England Agriculture, *Workshop Summary Report, New England Regional Climate Change Impacts Workshop, Institute for the Study of Earth, Oceans, and Space, University of New Hampshire, Durham, New Hampshire. 1997.*

Great Plains Region – Ag.

- Alward, R. D., J. K. Detling, and D. G. Milchunas. Grassland Vegetation Changes and Nocturnal Global Warming. *Science*, 283, 229-231. 1999.
- Anderson, J. M.. The Effects of Climate Change on Decomposition Processes in Grassland and Coniferous Forests. *Ecological Applications*, 1, 326-347. 1991.
- Census of Agriculture. USDA. 1997.
(<http://www.nass.usda.gov/census/>)
- Cole, C. V., J. W. B. Stewart, D. S. Ojima, W. J. Parton, and D. S. Schimel. Modeling Land Use Effects on Soil Organic Matter Dynamics in the North American Great Plains. *Ecology of Arable Land - Perspectives and Challenges, Developments in Plant and Soil Sciences*, edited by M. Clarholm and L. Bergstrom, Kluwer Academic Publishers, Dordrecht, the Netherlands, 39, pp. 89-98. 1989.
- Cole, C. V., I. C. Burke, W. J. Parton, D. S. Schimel, D. S. Ojima, and J. W. B. Stewart. Analysis of Historical Changes in Soil Fertility and Organic Matter Levels of the North American Great Plains, *Challenges in Dryland Agriculture, A Global Perspective, Proceedings of the International Conference on Dryland Farming, August 1988*, edited by P. W. Unger, T. V. Sneed, W. R. Jordon, and R. Jensen, Texas A&M University, College Station, Texas, pp. 436- 438. 1990 .
- Hahn, G. L., and T. L. Mader. Heat Waves in Relation to Thermoregulation, Feeding Behavior, and Mortality of Feedlot Cattle. *Proceedings of 5th International Livestock Environment Symposium. Vol. I*, pp. 563-571, American Society of Agricultural Engineers, Minneapolis, Minnesota. 1997.
- Hahn, G.L., and J. A. Morgan. Potential Consequences of Climate Change on Ruminant Livestock Production. *Paper presented at the Climate Change Impacts on Rangeland Systems Symposium, Society for Range Management annual meeting, Omaha, Nebraska, February 25- 26, 1999, Sponsored by the Central Great Plains Assessment and the Department of Energy*. 1999.
- Hayden, B. P.. Regional Climate and the Distribution of Tall Grass Prairie. *Grassland Dynamics*, edited by A. K. Knapp, J. M. Briggs, D. C. Hartnett, and S. L. Collins, Oxford University Press, Inc, New York, New York, US, p. 19-34. 1998.
- Jenny, H.. The Soil Resource, Origin and Behavior. *Ecological Studies*, vol. 37, Springer- Verlag, New York. 1980.
- Muhs, D. R., and P. B. Maat. The Potential Response of Great Plains Eolian Sands to Greenhouse Warming and Precipitation Reduction on the Great Plains of the USA. *Journal of 36 Arid Environments*, 25, 351-361. 1993.
- Parton, W. J., D. S. Schimel, C. V. Cole, and D. S. Ojima. Analysis of Factors Controlling Soil Organic Matter Levels in Great Plains Grasslands. *Soil Science Society of America Journal*, 51, 1173-1179. 1987.

Parton, W. J., D. S. Schimel, D. S. Ojima, and C. V. Cole. A General Model for Soil Organic Matter Dynamics: Sensitivity to Litter Chemistry, Texture, and Management. *Quantitative Modeling of Soil Forming Processes*, edited by R. B. Bryant and R. W. Arnold, pp. 147-167, *Soil Science Society of America Special Publication 39*, Soil Science Society of America, Madison, Wisconsin. 1994.

Peterson, G. A., and C.V. Cole. Productivity of Great Plains Soils: Past, Present, and Future. *Conservation of Great Plains Ecosystems*. Edited by S. R. Johnson, and A. Bouzaher, pp. 325-342, *Kluwer Academic Publishers, Dordrecht, the Netherlands*. 1995.

West Region – Ag.

Aber, J., R. Neilson, S. McNulty, J. Lenihan, D. Bachelet, and R. Drapek. Forest Processes and Global Environmental Change: Predicting the Effects of Individual and Multiple Stressors. *BioScience*, in press, 2000.

Agricultural Resources and Environmental Indicators, 1996-1997. *Agricultural Handbook No. 712*, US Department of Agriculture, Economic Research Service, Washington, DC. 1997.

Dale, V. H., et al., Forest Disturbances and Climate Change, *BioScience*, in press, 2000.

McClaren, M., and M. Patterson. Ranching in Climate Variability and Change in the Southwest. *Final Report of the Southwest Regional Climate Change Symposium and Workshop*, edited by R. Merideth, D. Liverman, R. Bales, and M. Patterson, University of Arizona, Tucson, Arizona. 1998.

Nemani, R. R., M. A. White, D. R. Cayan, G. V. Jones, S. W. Running, and J. C. Coughlan. Asymmetric Climate Warming Improves California Vintages. *Climate Research*.

US Geological Survey. 1999
(http://goechange.er.usgs.gov/sw/changes/anthropogenic/cropland/lu4592_lyt.gif)

Pacific Northwest Region – Ag.

Brubaker, L. B.. Responses of Tree Populations to Climatic Change, *Vegetation*, 67, 119, 1986.

Dale, V. H., and J. F. Franklin. Potential Effects of Climate Change on Stand Development in the Pacific Northwest. *Canadian Journal of Forest Resources*, 19, 1581, 1989.

FEMAT (Forest Ecosystem Management Assessment Team). Forest Ecosystem Management: An Ecological, Economic, and Social Assessment. *US Department of the Interior, US Department of Agriculture, US Department of Commerce, and US Environmental Protection Agency, Washington, DC*, 729 pp., 1993.

Franklin, J. F.. Pacific Northwest Forests. *North American Terrestrial Vegetation*, edited by M. G. Barbour and W. D. Billings, pp. 103-130, *Cambridge University Press, Cambridge, United Kingdom*, 1988.

Franklin, J. F., et al.. Effects of Global Climatic Change on Forests in Northwestern North America. *Northwest Environmental Journal*, 7, 233-254, 1991.

- Graumlich, L. J.. Subalpine Tree Growth, Climate, and Increasing CO₂ : An Assessment of Recent Growth Trends. *Ecology*, 72, 1-11, 1991.
- Grier, C. C., and S. Running. Leaf Area of Mature Northwestern Coniferous Forests: Relation to Site Water Balance. *Ecology* (58), 893, 1977.
- Haynes, R. W., D. M. Adams, and J. R. Mills. The 1993 RPA Timber Assessment Update. *USDA Forest Service, Rocky Mountain Forest and Range Experimental Station, General Technical Report RM-GTR*. March 1995.
- Heyerdahl, E. K.. Spatial and Temporal Variation in Historical Fire Regimes of the Blue Mountains, Oregon, and Washington: The Influence of Climate. *Ph.D. dissertation, College of Forest Resources, University of Washington, Seattle, Washington*, 1997.
- Keane, R. E., and S. F. Arno. Rapid Decline of Whitebark Pine in Western Montana: Evidence from 20-year Remeasurements. *Western Journal of Applied Forestry*, 8(2), 44-47, 1993.
- Kellogg, E., (Ed.). Coastal Temperate Rain Forests: Ecological Characteristics, Status, and Distribution Worldwide. *Ecotrust Occasional Paper Series 1, Ecotrust and Conservation International, Portland, Oregon, and Washington, DC*, 64 pp., 1992.
- Kemp, W. P., D. O. Everson, and W. G. Wellington. Regional Climatic Patterns and Western Spruce Budworm Outbreaks. *USDA Forest Service Cooperative State Research Service, Technical Bulletin Number 1693, USDA, Corvallis, Oregon*, 1985.
- Kendall, K. C.. Whitebark Pine: Ecosystem in Peril. *Our living resources: A report to the Nation on the distribution, abundance, and health of US plants, animals, and ecosystems, edited by E. T. LaRoe, G. S. Farris, C. E. Puckett, P. D. Doran, M. J. Mac*, pp. 228-230, *US National Biological Service, Washington, DC*, 1995.
- Lehmkuhl, J. F., P. F. Hessburg, R. L. Everett, M. H. Huff, and R. D. Ottmar. Historical and Current Forest Landscapes of Eastern Oregon and Washington, Part 1: Vegetation Pattern and Insect and Disease Hazards. *General Technical Report PNW-GTR-328, USDA Forest Service, Corvallis, Oregon*, 1994.
- Little, R. L., D. L. Peterson, and L. L. Conquest. Regeneration of Subalpine Fir (*Abies lasiocarpa*) Following Fire: Effects of Climate and Other Factors. *Canadian Journal of Forest Research*, 24, 934-944, 1994.
- Marcot, B. G., R. S. Holthausen, J. Teply, and W. D. Carrier. Old-Growth Inventories: Status, Definitions, and Visions for the Future. *Wildlife and Vegetation in Unmanaged Douglas-Fir Forests, edited by L. F. Ruggiero, K. Aubry, and M. H. Huff*, *US Forest Service General Technical Report PNW-GTR-285*, pp. 47-60, *Pacific Northwest Research Station, Portland, Oregon*, 1991.
- Mason, R. R., and B. E. Wickman. The Douglas-Fir Tussock Moth in the Interior Pacific Northwest. *Chapter 10 in Dynamics of Forest Insect Populations, edited by A. A. Berryman*, *Plenum Press, New York*, 1988.
- Miller, R. F., and J. A. Rose. Western Juniper Expansion in Eastern Oregon. *Great Basin Naturalist*, 55, 37-45, 1995.

- Mote, P. W., W. S. Keeton, and J. F. Franklin. Decadal Variations in Forest Fire Activity in the Pacific Northwest. *11th Conference on Applied Climatology, American Meteorological Society, Boston, Massachusetts*, 1999a.
- Neilson, R. P., G. A. King, and J. Lenihan. Modeling Forest Response to Climatic Change: The Potential for Large Emissions of Carbon from Dying Forests. *Carbon Balance of the World's Forested Ecosystems: Towards a Global Assessment*, edited by J. Kanninen, pp. 150-162, *Academy of Finland, Joensuu, Finland*, 1994.
- Overpeck, J. T., D. Rind, and R. Goldberg. Climate-Induced Changes in Forest Disturbance and Vegetation. *Nature*, 343, 51-53, 1990.
- Peterson, D. L.. Climate, Limiting Factors and Environmental Change in High-Altitude Forests of Western North America. *Climatic Variability and Extremes: The Impact on Forests*, edited by M. Beniston and J. L. Innes, *Springer-Verlag, Heidelberg, Germany*, 1998.
- Peterson, D. W., and D. L. Peterson. Growth Responses of Mountain Hemlock (*Tsuga mertensiana*) to Interannual and Interdecadal Climate Variability. *Ecology*, in review, 2000.
- US State Fact Sheets. *US Department of Agriculture, Economic Research Service*, 2000 (<http://www.ers.usda.gov/epubs/other/usfact/>)
- Waring, R. H., and J. F. Franklin. Evergreen Coniferous Forests of the Pacific Northwest. *Science*, 204, 1380, 1979.

Alaska – Ag.

- Barber, V. A., G. P. Juday, and B. P. Finney. Reduced Growth of Alaskan White Spruce in the 20th Century from Temperature-Induced Drought Stress. *Nature*, 405, 6787, 668-673, 2000.
- Furniss, R. L., and V. M. Carolin. Western Forest Insects. *USDA Forest Service Miscellaneous Publication 1339*, Washington, DC, 1977.
- Hennon P. E., and C. G. Shaw. The Enigma of Yellow-Cedar Decline: What is Killing These Long-Lived, Defensive Trees?. *Journal of Forestry*, 95(12), 4-10, December 1997.
- Hogg, E. H.. Simulation of Inter-Annual Responses of Trembling Aspen Stands to Climatic Variation and Insect Defoliation in Western Canada. *Ecological Modeling*, 114(2-3), 175-193, 1999.
- Hogg, E. H., and A. G. Schwarz. Regeneration of Planted Conifers Across Climatic Moisture Gradients on the Canadian Prairies: Implications for Distribution and Climate Change. *Journal of Biogeography*, (24)4, 527-534, July 1997.
- Holsten, E. H., and R. Burnside. Forest Health in Alaska: An Update. *Western Forester* 42(4), 8-9, 1997.

- Holsten, E. H., P. E. Hennone, and R. A. Werner. Insects and Diseases of Alaska Forests. *USDA Forest Service, Alaska Region Report Number 181*, revised October 1985. Anchorage, Alaska, 1985.
- Juday, G. P. and R. Barry. Growth Response of Upland White Spruce in Bonanza Creek LTER in Central Alaska. *Proceedings of Ecological society of America, Annual combined meeting, 10-14 August 1996, Providence Rhode Island*, 222, 1996.
- Juday, G. P., R. A. Ott, D. W. Valentine, and V. A. Barber. Forests, Climate Stress, Insects, and Fire. *Implications of Global Change in Alaska and the Bering Sea Region, Proceedings of a workshop, University of Alaska, Fairbanks, June 1997*, edited by G. Weller and P. A. Anderson, *Center for Global Change and Arctic System Research*, 23-49, April 1998.
- Kasischke, E. S., K. Bergen, R. Fennimore, F. Sotelo, G. Stephens, A. Janetos, and H. H. Shugart. Satellite Imagery Gives Clear Picture of Russia's Boreal Forest Fires. *Eos*, (80)13, 141-147, 1999.
- Osterkamp, T. E., L. Viereck, Y. Shur, M. T. Jorgenson, C. H. Racine, A. P. Doyle, and R. D. Boone. Observations of Thermokarst and its Impact on Boreal Forests in Alaska. *Arctic, Antarctic, and Alpine Research*, in press, 2000.
- Powell, D. S., J. L. Falukner, D. R. Darr, Z. Zhu, and D. W. MacCleery. Forest Resources of the United States, 1992. *USDA Forest Service, Rocky Mountain Forest and Range Experiment Station, Fort Collins Colorado, General Technical Report RM-234*, 1993.
- Sieben, B. G., D. L. Spittlehouse, J. A. McLean, and R. A. Benton. White Pine Weevil Hazard Under GISS Climate Change Scenarios in the Mackenzie Basin Using Radiosonde Derived Lapse Rates. *Mackenzie Basin Impact Study Final Report, Proceedings of a conference in Yellowknife, Northwest Territories, May 1996*, edited by S. J. Cohen, *Environment Canada, Atmospheric Environment Service*, 1997.
- Van Cleve K., W. C. Oechel, and J. L. Hom. Response of Black Spruce (*Picea mariana*) Ecosystems to Soil Temperature Modifications in Interior Alaska. *Canadian Journal of Forest Research*, 20, 1530-1535, 1990.
- Veblen, T. T., and P. B. Alaback. A Comparative Review of Forest Dynamics and Disturbance in the Temperate Rainforests of North and South America. *High-Latitude Rainforests and Associated Ecosystems of the West Coast of The Americas: Climate, Hydrology, Ecology, and Conservation*, edited by R. G. Lawford, P. B. Alaback, and E. Fuentes, pp. 173-213, *Springer-Verlag, New York*, 1996.
- Werner, R. A.. Forest Health in Boreal Ecosystems of Alaska. *The Forestry Chronicle*, 72(1), 43-46, 1996.

US Affiliated Islands – Ag.

- Loope, L. L., and T. W. Giambelluca. Vulnerability of Island Tropical Montane Cloud Forests to Climate Change, With Special Reference to East Maui, Hawaii. *Climatic Change*, 39, 503-517, 1998.
- O'Brien, S. T., B. P. Hayden, and H. H. Shugart. Global Climate Change, Hurricanes, and a Tropical Forest. *Climatic Change*, 22, 175-190, 1992.

Research Sectors of the Report

Agriculture Sector – Ag.

- Adams, R. M., C. Rosenzweig, R. M. Peart, J. T. Richie, B. A. McCarl, J. D. Glycer, R. B. Curry, J. W. Jones, K. J. Boote, and L. H. Allen. Global Climate Change and US Agriculture. *Nature*, 345, 219-224, 1990.
- Adams, R.M., R.A. Fleming, C.C. Chang, B.A. McCarl, and C. Rosenzweig. A Reassessment of the Economic Effects of Global Climate Change on US Agriculture. *Climatic Change*, 30, 147-167, 1995.
- Adams, D., R. J. Alig, B. A. McCarl, J. M. Callaway, and S. Winnett. The Forest and Agricultural Sector Optimization Model: Model Structure and Applications. *USDA Forest Service Research Paper PNW-RP-495, USDA Forest Service, Pacific Northwest Experiment Station, Portland, Oregon*, 1997.
- Adams, R. M., B. H. Hurd, and J. Reilly. A Review of Impacts to US Agricultural Resources. *Pew Center on Global Climate Change, Arlington, VA*, 36 pp., 1999a.
- Adams, R. M., B. A. McCarl, K. Segerson, C. Rosenzweig, K. J. Bryant, B. L. Dixon, R. Conner, R. E. Evenson, and D. Ojima. Economic Effects of Climate Change on US Agriculture. *The Impact of Climate Change on the United States Economy*, edited by R. Mendelsohn and J. Neumann, Cambridge University Press, Cambridge, United Kingdom, pp. 18-54, 1999b.
- Agricultural Statistics. *US Department of Agriculture, US Government Printing Office, Washington, D.C.*, 1987.
- Ben Mechlia, N., and J. J. Carrol. Agroclimatic Modeling for the Simulation of Phenology, Yield, and Quality of Crop production: 1. Citrus Response Formulation. *International Journal of Biometeorology*, 33, 36-51, 1989.
- Chaudhuri, U. N., M .B. Kirkam, and E. T. Kanemasu. Root Growth of Winter Wheat Under Elevated Carbon Dioxide and Drought. *Crop Science*, 30, 853-857, 1990.
- Easterling, W.E., III, P. R. Crosson, N. J. Rosenberg, M. McKenney, L. A. Katz, and K. Lemon. Agricultural Impacts of and Responses to Climate Change in the Missouri-Iowa-Nebraska-Kansas (MINK) Region. *Climate Change*, 24, 23-61, 1993.
- FEDS Budgets. *US Department of Agriculture, Economic Research Service*, 1982.
- House, R.M.. USMP Regional Agricultural Model. *United States Department of Agriculture, Economic Research Service, National Economics Division*, Draft, 1987.
- Izaurrealde, C. R., R. A. Brown, and N. J. Rosenberg. US Regional Agricultural Production in 2030 and 2095: Response to CO 2 Fertilization and Hadley Climate Model (HadCM2) Projections of Greenhouse-Forced Climatic Change. *PNNL-12252, Pacific Northwest National Laboratories, Richland, Washington*, 1999.

- Kane, S., J. Reilly, and J. Tobey. Climate Change: Economic Implications for World Agriculture. *AER No. 647, US Department of Agriculture, Natural Resources and Environmental Division, Economic Research Service, Washington, DC*, 1991.
- Kane, S., J. Reilly, and J. Tobey. An Empirical Study of the Economic Effects of Climate Change on World Agriculture. *Climatic Change*, 21, 17-35, 1992.
- Kimball, B. A.. Carbon dioxide and Agricultural yield: An Assemblage and Analysis of 430 Prior Observations. *Agronomy Journal*, 75, 779-786, 1983.
- Kimball, B. A., P. J. Pinter, Jr., R. L. Garcia, R. L. LaMorte, G. W. Wall, D. J. Hunsaker, G. Wechsung, F. Wechsung, and T. Kartschall. Productivity and Water Use of Wheat Under Free- Air CO₂ Enrichment. *Global Change Biology*, 1, 429-442, 1995.
- Lambert, D.K., B.A. McCarl, Q. He, M.S. Kaylen, W. Rosenthal, C.C. Chang, and W.I. Nayda. Uncertain Yields in Sectoral Welfare Analysis: An Application to Global Warming. *Journal Agricultural and Applied Economics* 423-435, 1995.
- Lewandrowski, J. and D. Schimmelpfennig. Agricultural Adaptation to Climate Change: Issues of Long-Run Sustainability. *Land Economics*, 75(1), 39-57, 1999.
- Long, S. P.. Modification of the Response of Photosynthetic Productivity to Rising Temperature by Atmospheric CO₂ Concentrations: Has its Importance Been Underestimated?, *Plant, Cell and Environment*, 14(8), 729-739, 1991.
- Mendelsohn, R., W. D. Nordhaus, and D. Shaw. The Impact of Global Warming on Agriculture: A Ricardian Analysis. *The American Economic Review*, 84(4), 753-771, 1994.
- Mitchell, R.A.C., V.J. Mitchell, S.P. Driscoll, J. Franklin, and D.W. Lawlor. Effects of Increased CO₂ Concentration and Temperature on Growth and Yield of Winter Wheat at Two Levels of Nitrogen Application. *Plant, Cell, and Environment*, 16, 521-529, 1993.
- Parry, M. L.. Agriculture and Forestry. *Climate Change: The IPCC Impacts Assessment*, edited by W. J. McG. Tegarrrt, G. W. Sheldon, and D. C. Griffiths, UN Intergovernmental Panel on Climate Change, Australian Government Printing Office, Canberra, 1990a.
- Parry, M. L.. Climate Change and World Agriculture. *Earthscan Publications Ltd., London, England*, 1990b.
- Parton, W. J., D. S. Schimel, and D. S. Ojima. Environmental Change in Grasslands: Assessment Using Models. *Climate Change*, 28(1-2), 111-141, 1994.
- Preparing US Agriculture for Global Climate Change. *CAST (Council for Agricultural Science and Technology), Task Force Report No. 119, Ames, Iowa*, 96 pp., 1992.
- Reilly, J. (Guest Editor). Climate Change, Impacts on Agriculture. *Climatic Change*, 43(4), 645-793, 1999.

- Reilly, J., et al.. Changing Climate and Changing Agriculture: Report of the Agricultural Sector Assessment Team. 2000. Available at: (<http://www.nacc.usgcrp.gov/sectors/agriculture/working-papers.html>) , in review
- Reilly, J., N. Hohmann, and S. Kane. Climate Change and Agriculture: Global and Regional Effects Using an Economic Model of International Trade. *MIT-CEEPR 93-012WP*, Center for Energy and Environmental Policy Research, Massachusetts Institute of Technology, Cambridge, Massachusetts, August 1993.
- Rosenzweig, C., and D. Hillel. Climate Change and the Global Harvest: Potential Impacts of the Greenhouse Effect on Agriculture. *Oxford University Press, New York*, 1998.
- Rosenzweig, C., A. Iglesias, X. B. Yang, P. R. Epstein, and E. Chivian. Climate Change and US Agriculture: The Impacts of Warming and Extreme Weather Events on Productivity, Plant Diseases, and Pests. *Center for Health and the Global Environment, Harvard University, Cambridge, Massachusetts*, pp. 46, 2000.
- Rosenzweig, C., and F. N. Tubiello. Impacts of Future Climate Change on Mediterranean Agriculture: Current Methodologies and Future Directions. *Climate Change*, 1, 219-232, 1997.
- Schimmelpfennig, D., J. Lewandowski, J. Reilly, M. Tsigas, and I. Parry. Agricultural Adaptation to Climate Change: Issues of Long-Run Sustainability. *Agricultural Economics Report No. 740, Economic Research Service, USDA, Washington DC*, June 1996.
- Shriner, D. S., and R. B. Street. North America. *The Regional Impacts of Climate Change: An Assessment of Vulnerability*, edited by R. T. Watson, M. C. Zinyowera, and R. H. Moss, Cambridge University Press, Cambridge, United Kingdom, pp. 253-330, 1998.
- Sionit, N., D. A. Mortensen, B. R. Strain, and H. Hellmers. Growth Response of Wheat to CO₂ Enrichment and Different Levels of Mineral Nutrition. *Agronomy Journal*, 73, 1023-1027, 1981.
- Southworth, J., J. C. Randolph, M. Habeck, O. C. Doering, R. A. Pfeifer, G. Rao, and J. Johnston. Consequences of future Climate Change and Changing Climate Variability on Corn Yields in the Midwest US. *Agriculture, Ecosystems, and Environment*, in press, 2000.
- Tobey, J., J. Reilly, and S. Kane. Economic Implications of Global Climate Change for World Agriculture. *Journal of Agricultural and Resource Economics*, 17(1), 195-204, 1992.
- Tsuji, G.Y., G. Uehara, and S. Balas (Eds.). DSSAT v3. *University of Hawaii, Honolulu, Hawaii*, 1994.
- Tubiello, F. N., C. Rosenzweig, B. A. Kimball, P. J. Pinter, Jr., G. W. Wall, D. J. Hunsaker, R. L. Lamorte, and R. L. Garcia. Testing CERES-Wheat With FACE Data: CO₂ and Water Interactions. *Agronomy Journal*, 91, 247-255, 1999.

Water Sector – Ag.

Kimball, B. A.. Carbon Dioxide and Agricultural Yield: An Assemblage and Analysis of 430 Prior Observations. *Agronomy Journal*, 75, 779-788, 1983.

Forest Sector – Ag.

Aber, J., A. Magill, S. G. McNulty, R. D. Boone, K. J. Nadelhoffer, M. Downs, and R. Hallett. Forest Biogeochemistry and Primary Production Altered by Nitrogen Saturation. *Water, Air, and Soil Pollution*, 85, 1665-1670, 1995.

Aber, J., R. P. Neilson, S. McNulty, J. Lenihan, D. Bachelet, and R. Drapek. Forest Processes and Global Environmental Change: Predicting the Effects of Individual and Multiple Stresses. *BioScience*, in press, 2001.

Adams, D., R. J. Alig, B. A. McCarl, J. M. Callaway, and S. Winnett. The Forest and Agricultural Sector Optimization Model: Model Structure and Applications. *USDA Forest Service Research Paper PNW-RP-495, USDA Forest Service, Pacific Northwest Experiment Station, Portland, Oregon*, 1997.

Alig, R. J., et al.. Assessing Effects of Mitigation Strategies for Global Climate Change with an Intertemporal Model of the US Forest and Agriculture Sectors. *Environmental and Resource Economics*, 9, 259-274, 1997.

Alig, R. J., D. M. Adams, and B. A. McCarl. Impacts of Incorporating Land Exchanges Between Forestry and Agriculture in Sector Models. *Journal of Agricultural and Applied Economics*, 30, 389-401, 1998.

Binkley, C. S.. A Case Study of the Effects of CO₂-Induced Climatic Warming on Forest Growth and the Forest Sector: B. Economic Effects on the World's Forest Sector. *The Impact of Climatic Variations on Agriculture*, edited by M. L. Parry, T. R. Carter, and N. T. Konijn, Kluwer Academic Publishers, Dordrecht, the Netherlands, 1988.

Brooks, D. J.. US Forests in a Global Context. *General Technical Report RM-228, Rocky Mountain Forest and Range Experiment Station, Fort Collins, Colorado*, 1993.

Burns, R. M., and B. H. Honkala. Silvics of North America, Volume 1, Conifers. *Agriculture Handbook 654, US Department of Agriculture Forest Service, Washington, DC*, 1990.

Crookshanks, M., G. Taylor, and M. Broadmeadow. Elevated CO₂ and Tree Root-Growth Contrasting Responses in *Fraxinus Excelsior*, *Quercus Petraea*, and *Pinus Sylvestris*. *New Phytologist*, 138, 241-250, 1998.

Dale V. H., R. H. Gardner, D. L. DeAngelis, C. C. Eagar, and J. W. Webb. Elevation- Mediated Effects of Balsam Wooly Adelgid on Southern Appalachian Spruce-Fir Forests. *Canadian Journal of Forest Research*, 21, 1639-1648, 1991.

Dale, V. H.. et al.. Forest Disturbances and Climate Change. *BioScience*, in press, 2001.

- Deluccia, E. H., et al.. Net Primary Production of a Forest Ecosystem with Experimental CO₂ Enrichment, *Science*, 284, 1177-1179, 1999.
- Eamus, D., and P. G. Jarvis. The Direct Effects of Increase in the Global Atmospheric CO₂ Concentration on Natural and Commercial Temperate Trees and Forests. *Advances in Ecological Research*, 19, 1-55, 1989.
- Fenn, M. E., M. A. Poth, and D. W. Johnson. Evidence for Nitrogen Saturation in the San Bernardino Mountains in Southern California. *Forest Ecology and Management*, 82, 211-230, 1996.
- Flannigan, M. D., et al. Future Wildfire in Circumboreal Forests in Relation to Global Warming. *Journal of Vegetation Science*, 9, 469-476, 1998.
- Flannigan, M. D., B. J. Stocks, and B. M. Wotton. Climate Change and Forest Fires. *The Science of the Total Environment*, 262, 221-230, 2000.
- Forest Statistics of the United States. *Forest Service Resource Bulletin PNW-RB-168, USDA Forest Service Pacific Northwest Research Station, Portland, Oregon*, 1989.
- Fox, S., and R. A. Mickler, (Eds.). Impacts of Air Pollutants on Southern Pine Forests. *Springer-Verlag, New York*, 1996.
- Guak, S., D. M. Olszyk, L. H. Fuchigani, and D. T. Tingey. Effects of Elevated CO₂ and Temperature on Cold Hardiness and Spring Bud Burst and Growth of Douglas-Fir (*Pseudotsuga menziesii*). *Tree Physiology*, 18, 671-679, 1998.
- Hanson, P., and J. Weltzin. Drought, Forests, and Climate Change. *The Science of the Total Environment*, 262, 206-220, 2000.
- Haynes, R. W., D. M. Adams, and J. R. Mills. The 1993 RPA Timber Assessment Update. *USDA Forest Service Rocky Mountain Forest and Range Experiment Station, Fort Collins, Colorado*, 1995.
- Ireland, L. C.. Ice Storm 1998 and the Forests of the Northeast. *Journal of Forestry*, 96, 32-30, 1998.
- Ireland, L. C.. Ice Storms and Forest Impacts. *The Science of the Total Environment*, 262, 231-242, 2000.
- Johnson, D. W., R. B. Thomas, K. L. Griffin, D. T. Tissue, J. T. Ball, B. R. Strain, and R. F. Walker. Effects of Carbon Dioxide and Nitrogen on Growth and Nitrogen Uptake in Ponderosa and Loblolly Pine. *Journal of Environmental Quality*, 27, 414-425, 1998.
- Joyce, L. A., J. R. Mills, L. S. Heath, A. D. McGuire, R. D. Haynes, and R. A. Birdsey. Forest Sector Impacts Form Changes in Forest Productivity Under Climate Change. *Journal of Biogeography*, 22, 703-713, 1995.
- Kellogg, R. S.. The Timber Supply of the United States. *Forest Service Circular 166, USDA Forest Service, Washington, DC*, 1907.

- Loehle, C, and D. LeBlanc. Model-Based Assessments of Climate Change Effects on Forests: A Critical Review. *Ecological Modelling*, 90, 1-31, 1996.
- Norby, R. J., S. D. Wullschlegel, C. A. Gunderson, D. W. Johnson, and R. Ceulemans. Tree Responses to Rising CO₂ in Field Experiments: Implication for the Future forest. *Plant, Cell and Environment*, 22, 683-714, 1999.
- Ollinger, S. V., J. D. Aber, and P. B. Reich. Simulating Ozone Effects on Forest Productivity: Interactions Between Leaf-, Canopy-, and Stand-Level Processes. *Ecological Applications*, 7, 1237-1251, 1997.
- Peterson, C. J.. Catastrophic Wind Damage to North American Forests and the Potential Impact of Climate Change, *The Science of the Total Environment*, 262, 287-312, 2000.
- Report of the Forest Service, Fiscal Year 1998. *USDA Forest Service, Washington DC*, 171 pp., 1998.
- Sampson, R. N., and D. Hair. Forests and Global Change. *Volume 2: Forest Management Opportunities for Mitigating Carbon Emissions, American Forests, Washington, DC*, 1996.
- Saxe, H., D. S. Ellsworth, and J. Heath. Tree and Forest Functioning in an Enriched CO₂ Atmosphere. *New Phytologist*, 139, 395-436, 1998.
- Shriner, D.S., et al.. North America. The Regional Impacts of Climate Change. *Edited by Robert T. Watson, M. C. Zinyowera, and R. H. Moss, pp. 253-330, Cambridge University Press, Cambridge, England*, 1998.
- Stocks, B. J., M. A. Fosberg, et al.. Climate Change and Forest Fire Potential in Russian and Canadian Boreal Forests. *Climatic Change*, 38, 1-13, 1998.
- Weinstein, D. A., W. P. Cropper, Jr., and S. G. McNulty. Summary of Simulated Forest Response to Climate Change in the Southeastern United States. *The Productivity and Sustainability of Southern Forest Ecosystems in a Changing Environment*, edited by R. A. Mickler and S. Fox, *Springer-Verlag, New York*, pp. 479-500, 1998.
- Wooton, B. M., and M. D. Flannigan. Length of the Fire Season in a Changing Climate. *Forestry Chronicle*, 69, 198-192, 1993.

Atmosphere

Scenarios Used for the Report

Scenarios for Climate Variability and Change – Atmo.

- Alcamo, J., E. Kreileman, M. Krol, R. Leemans, J. Bollen, J. Van Minnen, M. Schaeffer, S. Toet, and B. De Vries. Global Modelling of Environmental Change: An Overview of Image 2.1., pp. 3-94. *Global Change Scenarios of the 21st Century: Results from the Image 2.1 Model*, edited by J. Alcamo, R. Leemans, and E. Kreileman, Pergamon Press, Oxford, United Kingdom. 1998.
- Allan, R. J., J. Lindesay, and D. Parker. El Niño Southern Oscillation and Climate Variability. *CSIRO Publications, Melbourne, Australia*, 405 pp. 1996.
- Angell, J. K.. Difference in Radiosonde Temperature Trend for the Period 1979-1998 of MSU Data and the Period 1959-1998 Twice as Long. *Geophysical Research Letters*, 27, 2177-2180. 2000.
- Arritt, R. W., D. C. Goering, and C. J. Anderson. The North American Monsoon System in the Hadley Centre Coupled Ocean-Atmosphere GCM. *Geophysical Research Letters*, 27, 565- 568, 2000.
- Barnett, T. P. K., et al.. Detection and Attribution of Recent Climate Change: A Status Report. *Bulletin of the American Meteorological Society*, 80, 2631-2659, 1999.
- Beersma, J. J., K. M. Rider, G. J. Komen, E. Kaas, and V. V. Kharin. An Analysis of Extratropical Storms in the North Atlantic Region as Simulated in a Control and 2 x CO₂ Time- Slice Experiment with a High-Resolution Atmospheric Model. *Tellus*, 49A, 347-361. 1997.
- Bengtsson, L., M. Botzet, and M. Esch. Will Greenhouse Gas-Induced Warming Over the Next 50 Years Lead to Higher Frequency and Great Intensity Hurricanes?, *Tellus*, 48A, 57-73. 1996.
- Berger, A.. Long-Term Variation of Daily insolation and Quaternary Climatic Changes. *Journal Atmospheric Sciences*, 35, 2362-2367. 1978.
- Boer, G. J., G. M. Flato, and D. Ramsden. A Transient Climate Change Simulation with Historical and Projected Greenhouse Gas and Aerosol Forcing: Projected Climate for the 21st Century. *Climate Dynamics*, 16, 427-450. 2000a.
- Boer, G. J., G. M. Flato, M. C. Reader, and D. Ramsden. A Transient Climate Change Simulation with Historical and Projected Greenhouse Gas and Aerosol Forcing: Experimental Design and Comparison with the Instrumental Record for the 20th Century. *Climate Dynamics*, 16, 405-425. 2000b.

- Boer, G. J., N. A. McFarlane, R. Laprise, J. D. Henderson, and J. P. Blanchet. The Canadian Climate Centre Spectral Atmospheric General Circulation Model. *Atmosphere-Ocean*, 22(4), 397-429. 1984.
- Bove, M. C., J. B. Elsner, C. W. Landsea, X. Niu, and J. J. O'Brien. Effect of El Niño on US Landfalling Hurricanes, Revisited. *Bulletin of the American Meteorological Society*, 79, 2477- 2482. 1998.
- Boville, B. A., and P. R. Gent, The NCAR Climate System Model, Version One. *Journal of Climate*, 11(6), 1115-1130. 1998.
- Cai, W., and P. H. Whetton. Evidence for a Time-Varying Pattern of Greenhouse Warming in the Pacific Ocean. *Geophysical Research Letters*, 27, 2577-2580. 2000.
- Callendar, G. S., The Artificial Production of Carbon Dioxide and its Influence on Temperature. *Quarterly Journal of the Royal Meteorological Society*, 64, 223. 1938.
- Carnell, R. E., and C. A. Senior. Changes in Mid-Latitude Variability Due to Increasing Greenhouse Gases and Sulphate Aerosols. *Climate Dynamics*, 14, 369-383. 1998.
- Christoph, M., U. Ulbrich, and P. Speth. Midwinter Suppression of Northern Hemisphere Storm Track Activity in the Real Atmosphere and in GCM Experiments. *Journal of the Atmospheric Sciences*, 54, 1589-1599. 1997.
- Collins, M.. The El-Niño Southern Oscillation in the Second Hadley Centre Coupled Model and its Response to Greenhouse Warming. *Journal of Climate*, 13, 1299-1312. 2000.
- Dai, A., K. E. Trenberth, and T. R. Karl. Effects of Clouds, Soil Moisture, Precipitation, and Water Vapor on Diurnal Temperature Range. *Journal of Climate*, 12, 2451-2473. 1999.
- Dai, A., T. M. L. Wigley, B. A. Boville, J. T. Kiehl, and L. E. Buja. Climates of the 20th and 21st Centuries Simulated by NCAR Climate System Model. *Journal of Climate*, in press. 2000.
- Delworth, T. L., J. D. Mahlman, and T. R. Knutson. Changes in Heat Index Associated with CO₂ -Induced Global Warming. *Climatic Change*, 43, 369-386. 1999.
- Detecting the Climatic Effects of Increasing Carbon Dioxide. Edited by M.C. MacCracken and F.M. Luther, US Department of Energy, Washington, DC. 1985b.
- Doherty, R., and L. O. Mearns. A Comparison of Simulation of Current Climate From Two Coupled Atmosphere-Ocean Global Climate Models Against Observations and Evaluation of Their Future Climates. *National Institute for Global and Environmental Change (NIGEC)*, Boulder, Colorado. 1999.
- Easterling, D. R.. Variability and Trends in Temperature Threshold Exceedances and Frost Dates in the United States. *Bulletin of the American Meteorological Society*, in review. 2000.

- Easterling, D. R., T. R. Karl, E. H. Mason, P. Y. Hughes, D. P. Bowman, R. C. Daniels, and T. A. Boden. United States Historical Climatology Network (USHCN) Monthly Temperature and Precipitation Data. *Publication No. 4500, Carbon Dioxide Information and Analysis Center, Oak Ridge National Laboratory, Oak Ridge, Tennessee, 83 pp. with appendices.* 1996.
- Easterling, D. R., et al.. Maximum and Minimum Temperature Trends for the Globe. *Science*, 277, 364-367. 1997.
- Easterling, D. R., J. L. Evans, P. Ya. Groisman, T. R. Karl, K. E. Kunkel, and P. Ambenje. Observed Variability and Trends in Extreme Climate Events: A Review. *Bulletin of the American Meteorological Society*, 81, 417-425. 2000a.
- Easterling, D. R., G. A. Meehl, C. Parmesan, S. A. Changnon, T. R. Karl, and L. O. Mearns. Climate Extremes: Observations, Modeling, and Impacts, *Science*, 289, 2068-2074. 2000b.
- Elements of Change 1998, edited by S. J. Hassol and J. Katzenberger. *AGCI (Aspen Global Change Institute), Aspen Colorado.* 1999.
- Flato, G. M., G. J. Boer, W. G. Lee, N. A. McFarlane, D. Ramsden, M. C. Reader, and A. J. Weaver. The Canadian Centre for Climate Modeling and Analysis Global Coupled Model and its Climate. *Climate Dynamics*, 16, 451-467. 2000.
- Gates, W. L., et al.. An Overview of the Results of the Atmospheric Model Intercomparison Project (AMIP I). *Bulletin of the American Meteorological Society*, 80, 29-55. 1999.
- Giorgi, F., L. Mearns, C. Shields, and L. McDaniel. Regional Nested Model Simulations of Present Day and 2 x CO₂ Climate Over the Central Great Plains of the United States, *Climatic Change*, 40, 457-493. 1998.
- Goody, R. M., and Y. L. Yung. Atmospheric Radiation. *Oxford University Press, Oxford, United Kingdom.* 1989.
- Gregory, J. M. and J. F. B. Mitchell. Simulation of Daily Variability of Surface Temperature and Precipitation Over Europe in the Current and 2 x CO₂ Climates Using the UKMO Climate Model. *Quarterly Journal of the Royal Meteorological Society*, 121, 1451-1476. 1995.
- Gregory, J. M., J. F. B. Mitchell, and A. J. Brady. Summer Drought in Northern Midlatitudes in a Time-Dependent CO₂ Climate Experiment. *Journal of Climate*, 10, 662-686. 1997.
- Hansen, J., D. Johnson, A. Lacis, S. Lebedeff, P. Lee, D. Rind, and G. Russell. Climatic Impact from Increasing Carbon Dioxide, *Science*, 213, 957-966. 1981.
- Hansen, J., M. Sato, A. Lacis, R. Ruedy, I. Gegen, and E. Matthews. Climate Forcings in the Industrial Era. *Proceedings of the National Academy of Sciences*, 95, 12753-12758. 1998.
- Haywood, J. M., R. J. Stouffer, R. T. Wetherald, S. Manabe, and V. Ramaswamy. Transient Response of a Coupled Model to Estimated Changes in Greenhouse Gas and Sulfate Concentrations. *Geophysical Research Letters*, 24(11), 1335-1338. 1997.

- Hegerl, G. C., K. Hasselmann, U. Cubasch, J. F. B. Mitchell, E. Roeckner, R. Voss, and J. Waszkewitz. Multi-Fingerprint Detection and Attribution of Greenhouse Gas-and Aerosol-Forced Climate Change. *Climate Dynamics*, 13, 613-634. 1997.
- Hengeveld, H. G.. Projections for Canada's Climate Future. *Special report CCD-00-01, Environment Canada, Downsview, Ontario, Canada*. 2000.
- IPCC (Intergovernmental Panel on Climate Change). Climate Change: The IPCC Scientific Assessment, edited by J. T. Houghton, G. J. Jenkins, and J. J. Ephraums. *Cambridge University Press, Cambridge United Kingdom*, 365 pp. 1990.
- IPCC (Intergovernmental Panel on Climate Change). Climate Change 1992: The Supplementary Report to the IPCC Scientific Assessment, edited by J. T. Houghton, B. A. Callander, and S. K. Varney. *Cambridge University Press, Cambridge, United Kingdom*, 200 pp. 1992.
- IPCC (Intergovernmental Panel on Climate Change). Climate Change 1995: The Science of Climate Change, edited by J. T. Houghton, L. G. Meira Filho, B. A. Callander, N. Harris, A. Kattenberg, and K. Maskell. *Cambridge University Press, Cambridge, United Kingdom*, 572 pp. 1996a.
- IPCC (Intergovernmental Panel on Climate Change). An Introduction to Simple Climate Models Used in the IPCC Second Assessment Report, by D. Harvey, J. Gregory, M. Hoffert, A. Jain, M. Lal, R. Leemans, S. Raper, T. Wigley, and J. deWolde, and edited by J. T. Houghton, L. G. Meira Filho, D. Griggs, and K. Maskell. *World Meteorological Organization/United Nations Environment Programme*, 50 pp. 1997.
- Johns, T. C., R. E. Carnell, J. F. Crossley, J. M. Gregory, J. F. B. Mitchell, C. A. Senior, S. F. B. Tett, and R. A. Wood. The Second Hadley Centre Coupled Ocean-Atmosphere GCM: Model Description, Spinup and Validation. *Climate Dynamics*, 13, 103-134. 1997.
- Jones, P. D., M. New, D. E. Parker, S. Martin, and I. G. Rigor. Surface Air Temperature and its Changes Over the Past 150 Years. *Reviews of Geophysics*, 37, 173-199. 1999.
- Karl, T. R., and D. R. Easterling. Climate Extremes: Selected Review and Future Research Directions. *Climatic Change*, 42(10), 309-325. 1999.
- Karl, T. R., R. W. Knight, and B. Baker. The Record Breaking Global Temperatures of 1997 and 1998: Evidence for an Increase in the Rate of Global Warming?. *Geophysical Research Letters*, 27, 719-722. 2000.
- Karl, T. R., R. W. Knight, D. R. Easterling, and R. Quayle. Indices of Climate Change for the United States. *Bulletin of the American Meteorological Society*, 77, 279-292. 1996.
- Karl, T. R., R. W. Knight, and N. Plummer. Trends in High-Frequency Climate Variability in the Twentieth Century. *Nature*, 377, 217-220. 1995a.
- Karl, T. R., and R. W. Knight. The 1995 Chicago Heat Wave: How Likely is a Recurrence?. *Bulletin of the American Meteorological Society*, 78, 1107-1119. 1997.

- Karl, T. R., R. W. Knight, D. R. Easterling, and R. G. Quayle. Indices of Climate Change for the United States. *Bulletin of the American Meteorological Society*, 77, 279-292. 1995b.
- Kiehl, J. T., and K. E. Trenberth. Earth's Annual Global Mean Energy Budget. *Bulletin of the American Meteorological Society*, 78, 197-208. 1997.
- Klein, W. H.. Principal Tracks and Mean Frequencies of Cyclones and Anticyclones in the Northern Hemisphere. Research Paper 40, US Weather Bureau, Washington DC, 60 pp. 1957.
- Knutson, T. R., and S. Manabe. Time-Mean Response over the Tropical Pacific to Increased CO₂ in a Coupled Ocean-Atmosphere Model. *Journal of Climate*, 8, 2181-2199. 1995.
- Knutson, T. R., and S. Manabe. Model Assessment of Decadal Variability and Tropical Pacific Ocean. *Journal of Climate*, 11, 2273-2296. 1998.
- Knutson, T. R., and R. E. Tuleya. Increased Hurricane Intensities with CO₂ -Induced Warming as Simulated Using the GFDL Hurricane Prediction System. *Climate Dynamics*, 15, 503-519. 1999.
- Knutson, T. R., T. L. Delworth, K. W. Dixon, and R. J. Stouffer. Model Assessment of Regional Surface Temperature Trends (1949-1997). *Journal of Geophysical Research*, 104, 30981-30996. 1999.
- Knutson, T. R., R. E. Tuleya, and Y. Kurihara. Simulated Increase of Hurricane Intensities in a CO₂ -Warmed Climate. *Science*, 279, 1018-1020. 1998.
- Krishnamurti, T. N., R. Correa-Torres, M. Latif, and G. Daughenbaugh. The Impact of Current and Possibly Future Sea Surface Temperature Anomalies on the Frequency of Atlantic Hurricanes. *Tellus*, 50A, 186-210. 1998.
- Lambert, S. J.. The Effect of Enhanced Greenhouse Warming on Winter Cyclone Frequencies and Strengths. *Journal of Climate*, 8(5), 1447-1452. 1995.
- Lean, J., and D. Rind. Climate Forcing by Changing Solar Radiation. *Journal of Climate*, 11, 3069-3094. 1998.
- Ledley, T. S., E. T. Sundquist, S. E. Schwartz, D. K. Hall, J. D. Fellows, and T. L. Killeen. Climate Change and Greenhouse Gases. *EOS, Transactions of the American Geophysical Union*, 80(39), September 28, 1999, p. 453. 1999.
(http://www.agu.org/eos_elec/99148e.html)
- Legates, D. R., and C. J. Wilmott. Mean Seasonal and Spatial Variability in Global Surface Air Temperature. *Theoretical and Applied Climatology*, 41, 11-21. 1990a.
- Lunkeit, F., M. Ponater, R. Sausen, M. Sogalla, U. Ulbrich, and M. Windelband. Cyclonic Activity in a Warmer Climate. *Contributions to Atmospheric Physics*, 69, 393-407. 1996.
- Manabe, S., and R. T. Wetherald. The Effects of Doubling the CO₂ Concentration on the Climate of a General Circulation Model. *Journal of the Atmospheric Sciences*, 32, 3. 1975.

- McFarlane, N. A., G. J. Boer, J. P. Blanchet, and M. Lazare. The Canadian Climate Centre Second-Generation General Circulation Model and its Equilibrium Climate, *Journal of Climate*, 5, 1013-1044. 1992.
- Mearns, L. O., I. Bogardi, F. Giorgi, I. Matyasovszky, and M. Palecki. Comparison of Climate Change Scenarios Generated from Regional Climate Model Experiments and Statistical Downscaling. *Journal of Geophysical Research*, 104(D6), 6603-6621. 1999.
- Mearns, L. O., F. Giorgi, L. McDaniel, and C. Shields. Analysis of the Diurnal Range and Variability of Daily Temperature in a Nested Modeling Experiment: Comparison with Observations and 2 x CO₂ Results. *Climate Dynamics*, 11, 193-209. 1995.
- Meehl, G. A., and W. M. Washington. El Niño-Like Climate Change in a Model with Increased Atmospheric CO₂ Concentrations. *Nature*, 382, 56-60. 1996.
- Meehl, G. A., G. J. Boer, C. Covey, M. Latif, and R. J. Stouffer. Meeting Summary: The Coupled Model Intercomparison Project (CMIP). *Bulletin of the American Meteorological Society*, 81, 313-318. 2000a.
- Meehl, G. A., F. Zwiers, J. Evans, T. Knutson, L. Mearns, and P. Whetton. Trends in Extreme Weather and Climate Events: Issues Related to Modeling Extremes in Projections of Future Climate Change. *Bulletin of the American Meteorological Society*, 81, 427-436. 2000b.
- Mitchell, J. F. B., and T. C. Johns. On Modification of Global Warming by Sulfate Aerosols. *Journal of Climate*, 10(2), 245-267. 1997.
- Mitchell, J. F. B., T. C. Johns, J. M. Gregory, and S. Tett. Climate Response to Increasing Levels of Greenhouse Gases and Sulphate Aerosols. *Nature*, 376, 501-504. 1995.
- Mitchell, J. F. B., T. J. Johns, W. J. Ingram, and J. A. Lowe. The Effect of Stabilising Atmospheric Carbon Dioxide Concentrations on Global and Regional Climate Change. *Journal of Geophysical Research*, 27, 2977-2980. 2000.
- Mitchell, J. F. B., C. A. Wilson, and W. M. Cunningham. On CO₂ Climate Sensitivity and Model Dependence of Results. *Quarterly Journal of the Royal Meteorological Society*, 113, 293-322. 1987.
- Monahan, A. H., J. C. Fyfe, and G. M. Flato. A Regime View of Northern Hemisphere Atmospheric Variability and Change Under Global Warming. *Geophysical Research Letters*, 27, 1139-1142. 2000.
- Mote, P., and A. O'Neill. Numerical Modeling of the Global Atmosphere in the Climate System. *Kluwer Academic Publishers, Boston, Massachusetts*, 517 pp. 2000.
- Nihoul, J. C. J. (Ed.). Coupled Ocean-Atmosphere Models. Elsevier Science, Amsterdam, 767 pp. 1985.

- Noda, A., K. Yamaguchi, S. Yamaki, and S. Yukimoto. Relationship Between Natural Variability and CO₂-Induced Warming Pattern: MRI AOGCM Experiment. *Preprints volume, 10th Symposium on Global Change Studies, American Meteorological Society, Boston, Massachusetts*, pp. 359-362. 1999.
- NRC (National Research Council). Carbon Dioxide and Climate: A Scientific Assessment. *National Academy of Sciences, Washington, DC*, 22 pp. 1979.
- NRC (National Research Council). Changing Climate: Report of the Carbon Dioxide Assessment Committee. *National Academy Press, Washington, DC*, 496 pp. 1983.
- NRC (National Research Council). Capacity of US Climate Modeling. *National Academy Press, Washington, DC*. 1998.
- NRC (National Research Council). Reconciling Observations of Global Temperature Change. *National Academy Press, Washington, DC*, 85 pp. 2000.
- Parker, D. E., T. P. Legg, and C. K. Folland. Interdecadal Changes of Surface Temperatures Since the Late 19th Century. *Journal of Geophysical Research*, 99, 14373-14399. 1994.
- Pisias, N. G., and N. J. Shackleton. Modelling the Global Climate Response to Orbital Forcing and Atmospheric Carbon Dioxide Changes. *Nature*, 310, 757-759. 1984.
- Pitman, A., R. Pielke, Sr., R. Avissar, M. Claussen, J. Gash, and H. Dolman. The Role of the Land Surface in Weather and Climate: Does the Land Surface Matter?. *IGBP Newsletter*, 39, pp. 4-9. September 1999.
- Projecting the Climatic Effects of Increasing Carbon Dioxide. *Edited by M.C. MacCracken and E. M. Luther, US Department of Energy, Washington, DC*. 1985a.
- Quayle, R. G, T. C. Peterson, A. Basist, and C. Godfrey. An Operational Near-Real-Time Global Temperature Index. *Geophysical Research Letters*, 26, 333-335. 1999.
- Risbey, J. S., P. J. Kushner, P. J. Lamb, R. Miller, M. C. Morgan, M. Richman, G. Roe, and J. Smith. Generating Regional Climate Scenarios by Combining Synoptic-Climatological Guidance and GCM Output. *US EPA Research Report, Washington DC*, 88 pp. 1999. (also submitted to *Journal of Climate* by a subset of the authors and with different title)
- Schubert, M., J. Perlwitz, R. Blender, K. Fraedrich, and F. Lunkeit. North Atlantic Cyclones in CO₂-Induced Warm Climate Simulations: Frequency, Intensity, and Tracks. *Climate Dynamics*, 14, 827-837. 1998.
- Smith, E.. Atlantic and East Coast Hurricanes 1900-98: A Frequency and Intensity Study for the Twenty-First Century. *Bulletin of the American Meteorological Society*, 80, 2717-2720. 1999.
- Smith, S. J., N. Nakicenovic, and T. M. L. Wigley. Radiative Forcing in the IPCC SRES Scenarios. *Nature*, in review. 2000.

- Sousounis, P.. A Synoptic Assessment of Climate Change Model Output: Explaining the Differences and Similarities Between the Canadian and Hadley Climate Models. *Eleventh Symposium on Global Change Studies, 80th American Meteorological Society Annual Meeting, January 2000, American Meteorological Society, Boston, Massachusetts*. 1999.
- Stott, P.A., S.E.B. Tett, G.S. Jones, M.R. Allen, W.J. Ingram, and J.F.B. Mitchell. Attribution of Twentieth Century Temperature Change to Natural and Anthropogenic Causes. *Climate Dynamics, in press*. 2000.
- Stouffer, R.J., G. Hegerl, and S. Tett. A Comparison of Surface Air Temperature Variability in Three 1000-Year Coupled Ocean-Atmosphere Model Integrations. *Journal of Climate*, 13, 513-537. 2000.
- Tett, S.F.B., P.A. Stott, W.J. Allen, W.J. Ingram, and J.F.B. Mitchell. Causes of Twentieth Century Temperature Change. *Nature*, 399, 568-572. 1999.
- Trenberth, K.E., and J.W. Hurrell. Decadal Atmosphere-Ocean Variations in the Pacific. *Climate Dynamics*, 9, 303-319. 1994
- Van Loon, H., and J. Rogers. The Seesaw in Winter Temperatures Between Greenland and Northern Europe, Part I: General Description. *Monthly Weather Review*, 106, 296-310. 1978
- Walsh, K.J.E., and B.F. Ryan. Idealized Vortex Studies of the Effect of Climate Change on Tropical Cyclone Intensities. *Preprints volume, 23rd Conference on Hurricanes and Tropical Meteorology, American Meteorological Society, Boston, Massachusetts, pp 403-404*. 1999.
- Washington, W.M., and C.L. Parkinson. An Introduction to Three-Dimensional Climate Modeling. *University Science Books, Mill Valley, California, 422pp*. 1986.
- Washington, W.M., et al.. Parallel Climate Model (PCM) Control and 1%/year CO₂ Simulations with a 2/3 degree Ocean Model and a 27km Dynamical Sea Ice Model. *Climate Dynamics, in press*. 2000.
- Yoshimura, J., M. Sugi, and A. Noda. Influence of Greenhouse Warming on Tropical Cyclone Frequency Simulated by a High-Resolution AGCM. *Preprints volume, 10th Symposium on Global Change Studies, American Meteorological Society, Boston, Massachusetts, pp 555-558*. 1999.
- Zhang, Y., J.M. Wallace, and D.S. Battisti. ENSO-Like Inter-Decadal Variability: 1900-93. *Journal of Climate*, 10, 1004-1020. 1997.
- Zwiers, F.W., and V. Kharin. Changes in the Extremes of the Climate Simulated by CCC GCM2 Under CO₂ Doubling. *Journal of Climate*, 11, 2200-2222. 1998.

Vegetation and Biogeochemical Scenarios – Atmo.

- Prinn, R., et al.. Integrated Global System Model for Climate Policy Assessment: Feedbacks and Sensitivity Studies. *Climatic Change*, 41(3/4), 469-546. 1999.

Reilly, J., R. Prinn, J. Harnisch, J. Fitzmaurice, H. Jacoby, D. Kicklighter, P. Stone, A. Sokolov, and C. Wang. Multi-Gas Assessment of the Kyoto Protocol. *Nature*, 401, 549-555. 1999.

Report's Regional Elements of the U.S.

Northeast Region – Atmo.

Agee, E. M.. Trends in Cyclone and Anticyclone Frequency and Comparison with Periods of Warming and Cooling over North America. *Journal of Climate*, 4, 263-267, 1991.

Barron, E. J.. Climate Models: How Reliable are Their Predictions?. *Consequences*, 1, 16-27. 1995.

Bengtsson, L., M. Botzet, and M. Esch. Will Greenhouse-Gas-Induced Warming Over the Next 50 Years Lead to Higher Frequency and Greater Intensity of Hurricanes?. *Tellus*, 48, 57-73. 1996.

Boer, G. J., N. A. McFarlane, R. Laprise, J. D. Henderson, and J. P. Blanchet. The Canadian Climate Centre Spectral Atmospheric General Circulation Model. *Atmosphere-Ocean*, 22(4), 397-429. 1984.

Boer, G. J., G. M. Flato, M. C. Reader, and D. Ramsden. A Transient Climate Change Simulation with Historical and Projected Greenhouse Gas and Aerosol Forcing: Experimental Design and Comparison with the Instrumental Record for the 20th Century, *Climate Dynamics*, 16, 405- 426. 1999.

Boer, G. J., G. M. Flato, and D. Ramsden. A Transient Climate Change Simulation with Historical and Projected Greenhouse Gas and Aerosol Forcing: Projected Climate for the 21st Century. *Climate Dynamics*, 16, 427-450. 1999.

Bove, M. C., J. B. Elsner, C. W. Landsea, X. Niu, and J. J. O'Brien. Effect of El Niño on U.S. Land Falling Hurricanes, Revisited. *Bulletin of the American Meteorological Society*, 79, 27 2477-2482. 1998.

Broccoli, A. J.. The Greenhouse Effect: The Science Base. *The Baked Apple? Metropolitan New York in the Greenhouse*, edited by D. Hill, *Annals of the New York Academy of Sciences*, vol. 790, 23, 1996.

Carnell, R. E., and C. A. Senior. Changes in Mid-Latitude Variability Due to Increasing Greenhouse Gases and Sulphate Aerosols, *Climate Dynamics*, 14, 368-383, 1998.

Carnell, R. E., C. A. Senior, and J. F. B. Mitchell. An Assessment of Measures of Storminess: Simulated Changes in Northern Hemisphere Winter Due to Increasing CO₂, *Climate Dynamics*, 12, 467-476, 1996.

Changnon, S. A., and J. M. Changnon. Temporal Fluctuations in Weather Disasters: 1950-1989. *Climatic Change*, 22, 191-208, 1992.

- DeGaetano, A. T.. Climate Perspective and Impacts of the 1988 Northern New York and New England Ice Storm. *Bulletin of the American Meteorological Society*, 81, 237-254. 2000.
- Emanuel, K. A.. The Maximum Intensity of Hurricanes, *Journal of the Atmospheric Sciences*, 45, 1143-1154. 1988.
- Flato, G. M., G. J. Boer, W. G. Lee, N. A. McFarlane, D. Ramsden, M. C. Reader, A. J. Weaver. The Canadian Centre for Climate Modelling and Analysis Global Coupled Model and its Climate. *Climate Dynamics*, 16, 451-468. 1999.
- Hayden, B. P., Climate Change and Extratropical Storminess in the United States: An Assessment. *Journal of the American Water Resources Association*, 35, 1387-1398. 1999.
- Hughes, P. Y., E. H. Mason, T. R. Karl, and W. A. Brower. United States Historical Climatology Network Daily Temperature and Precipitation Data. *Environmental Sciences Division Publication 3778, Carbon Dioxide Information and Analysis Center, Oak Ridge National Laboratory, Oak Ridge, Tennessee*, 55 pp.. 1992.
- Idso, S.B., R.C. Balling, Jr., and R.S. Cervený. Carbon Dioxide and Hurricanes: Implications of Northern Hemispheric Warming for Atlantic/Caribbean Storms. *Meteorology and Atmospheric Physics*, 42, 259-263. 1990.
- IPCC (Intergovernmental Panel on Climate Change. Climate Change 1995, Second Scientific Assessment. *Cambridge University Press, Cambridge, UK*. 1996.
- Johns, T. C., R. E. Carnell, J. F. Crossley, J. M. Gregory, J. F. B. Mitchell, C. A. Senior, S. F. B. Tett, and R. A. Wood. The Second Hadley Centre Coupled Ocean-Atmosphere GCM: Model Description, Spinup, and Validation, *Climate Dynamics*, 13, 103-134. 1997.
- Karl, T. R., R. W. Knight, D. R. Easterling, and R. G. Quayle. Trends in U.S. Climate During the Twentieth Century. *Consequences*, 1, 2-12. 1996.
- Knutson, T. R., R. E. Tuleya, and Y. Kurihara. Simulated Increase of Hurricane Intensities in a CO₂-Warmed Climate. *Science*, 279, 1018-1020. 1998.
- Lighthill, J., G. Holland, W. Gray, C. Landsea, G. Craig, J. Evans, Y. Kurihara, and C. Guard. Global Climate Change and Tropical Cyclones, *Bulletin of the American Meteorological Society*, 75, 2147-2157. 1994.
- McFarlane, N. A., G. J. Boer, J. P. Blanchet, and M. Lazare. The Canadian Climate Centre Second-generation General Circulation Model and its Equilibrium Climate. *Journal of Climate*, 5, 1013-1044. 1992.
- Mitchell J. F. B., T. C. Johns, J. M. Gregory, and S. Tett. Climate Response to Increasing Levels of Greenhouse Gases and Sulphate Aerosols. *Nature*, 376, 501-504. 1995.
- Mitchell J. F. B., and T. C. Johns. On Modification of Global Warming by Sulfate Aerosols. *Journal of Climate*, 10, 245-267. 1997.

Polsky, C., J. Allard, N. Currit, R. G. Crane, and B. Yarnal. The Mid-Atlantic Region and its Climate: Past, Present, and Future. *Climate Research*, 14, 161-173.

Stephenson, D. B., and I. M. Held. GCM Response of Northern Winter Stationary Waves and Storm Tracks to Increasing Amounts of Carbon Dioxide, *Journal of Climate*, 6, 1859-1870. 1993.

US Global Change Research Program Forum on Global Change Modeling. Washington, D.C.. *USGCRP Report 95-02 Washington, DC*. 1995.

Southeast Region – Atmo.

Kiehl, J. T.. Climate Change Enhanced: Solving the Aerosol Puzzle. *Science* 283(5406), 1273-1275. 1999.

Lo, C. P., D. A. Quattrochi, and J. C. Luvall. Application of High-Resolution Thermal Infrared Remote Sensing and GIS to Assess the Urban Heat Island Effect. *International Journal of Remote Sensing*, 18, 287-304. 1997.

Lockwood, J. G.. Is Potential Evapotranspiration and its Relationship With Actual Evapotranspiration Sensitive to Elevated CO₂ Levels?, *Climatic Change*, 41(2), 193-212. 1999.

Quattrochi, D. A., and J. C. Luvall. Urban Sprawl and Urban Pall: Assessing the Impacts of Atlanta's Growth on Meteorology and Air Quality Using Remote Sensing and GIS. *Geographical Information Systems* 9, 26-33. 1999.

Quattrochi, D. A., J. C. Luvall, M. G. Estes, Jr., C. P. Lo, S. Q. Kidder, J. Hafner, H. Taha, R. D. Bornstein, R. R. Gillies, and K. P. Gallo. Project ATLANTA (ATLANTA LAnd use ANalysis: Temperature and Air quality): A Study of How the Urban Landscape Affects Meteorology and Air Quality Through Time. *Preprints, American Meteorological Society*, 104-107. 1998.

The State of the Southern Oxidants Study: Policy- Relevant Findings in Ozone Pollution Research, 1988-1994. *Southern Oxidants Study, Raleigh, North Carolina*, 94 pp. 1995.

Midwest Region – Atmo.

Climate Change and Wisconsin (230-F-97-008 ww), Climate Change and Michigan (230-F-97-008 v), Climate Change and Minnesota (230-F-97-008 w). *EPA*. 1997.
(<http://www.epa.gov/globalwarming/publications/impacts/state/index.html>)

IPCC (Intergovernmental Panel of Climate Change). Climate Change 1995: The Science of Climate Change. Edited by J. Y. Houghton, F. G. Meira Filho, B. A. Callander, N. Harris, A. Kattenberg, and K. Maskell, Cambridge University Press, Cambridge, United Kingdom, 570 pp.. 1996.

Meehl, G.A., F. Zwiers, J. Evans, T. Knutson, L. Mearns, and P. Whetton. Trends in Extreme Weather and Climate Events: Issues Related to Modeling Extremes in Projections of Future Climate Change. *Bulletin. American Meteorological Society*, 81, V. 81, No. 3, pp. 427-436.

Great Plains Region – Atmo.

Seielstad, G., (Ed.). Proceedings, Northern Great Plains Regional Workshop on Climate Variability and Climate Change. *University of North Dakota, Upper Midwest Aerospace Consortium*. 1998.

West Region – Atmo.

Bales, R. C., and D. M. Liverman. Climate Patterns and Trends in the Southwest. *Climate Variability and Change in the Southwest: Final Report of the Southwest Regional Climate Change Symposium and Workshop*, edited by R. Merideth, D. Liverman, R. Bales, and M. Patterson, *The University of Arizona, Tucson, Arizona*. 1998

Climate Change and New Mexico. EPA 236-F-98- 007p, *US Environmental Protection Agency, Washington, DC*. 1998a.

Climate Change and Utah. EPA 236-F-98-007z, *US Environmental Protection Agency, Washington, DC*. 1998b.

Climate Variability in the Southwest Region. CLIMAS. 1998
(<http://geo.ispe.arizona.edu/swclimate/water%context.htm>.)

Foundation Document Figures. *National Center for Atmospheric Research*. November 5, 1999.
(www.cgd.ucar.edu/naco/found/figs.html),

Houghton, J. T., L. G. Meira Filho, B. A. Callander, N. Harris, A. Kattenberg, and K. Maskell, (Eds.). Climate Change 1995: The Science of Climate Change. *Contribution of Working Group I to the Second Assessment Report of the Intergovernmental Panel on Climate Change*. *Cambridge University Press, Cambridge, England*, 1996.

Karl, T.R., C.N. Williams, Jr., F.T. Quinlan, and T.A. Boden. United States Historical Climatology Network (HCN) Serial Temperature and Precipitation Data. *Environmental Science Division, Publication No. 3404, Carbon Dioxide Information and Analysis Center, Oak Ridge National Laboratory, Oak Ridge, TN*, 389 pp. 1990

Liverman, D.. Southwest Overview in Climate Variability and Change in the Southwest. *Final Report of the Southwest Regional Climate Change Symposium and Workshop*, edited by R. Merideth, D. Liverman, R. Bales, and M. Patterson, *University of Arizona, Tucson, Arizona* 1998.

US Historical Climatology Network (USHCN), 1999.
(<http://www.ncdc.noaa.gov/ol/climate/research/ushcn/ushcn.html>)

Wagner, F. H., and J. Barron. Rocky Mountain/Great Basin Regional Climate-Change Workshop. *Utah State University, Logan, Utah*. 1998.

Pacific Northwest Region – Atmo.

- Boer, G. J., N. A. McFarlane, R. Laprise, J. D. Henderson, and J.-P. Blanchet. The Canadian Climate Centre Spectral Atmospheric General Circulation Model. *Atmosphere-Ocean*, 22(4), 397- 429, 1984.
- Boer, G. J., G. M. Flato, M. C. Reader, and D. Ramsden. A Transient Climate Change Simulation with Historical and Projected Greenhouse Gas and Aerosol Forcing: Experimental Design and Comparison with the Instrumental Record for the 20th Century. *Climate Dynamics*, 16, 405-426, 1999a.
- Boer, G. J., G. M. Flato, and D. Ramsden. A Transient Climate Change Simulation with Historical and Projected Greenhouse Gas and Aerosol Forcing: Projected Climate for the 21st Century, *Climate Dynamics*, 16, 427-450, 1999b.
- dell'Arciprete, P., N. Mantua, and R. C. Francis. The Instrumental Record of Climate Variability in the Pacific Northwest. Progress Report for Year 1. *JISAO Climate Impacts Group, University of Washington, Seattle, Washington*, 1996.
- Flato, G. M., G. J. Boer, W. G. Lee, N. A. McFarlane, D. Ramsden, M. C. Reader, and A. J. Weaver. The Canadian Centre for Climate Modelling and Analysis Global Coupled Model and its Climate. *Climate Dynamics*, in press, 2000.
- Fosberg, M. A., L. O. Mearns, and C. Price. Climate Change: Fire Interactions at the Global Scale: Predictions and Limitations of Methods. *Fire in the Environment*, edited by P. J. Crutzen and J. G. Goldammer, Wiley and Sons, New York, 1992.
- Giorgi, F., and G. Bates. On Climatological Skill of a Regional Model Over Complex Terrain. *Monthly Weather Review*, 117, 2325-2347, 1989.
- Giorgi, F., C. S. Brodeur, and G. T. Bates. Regional Climate Change Scenarios Over the United States Produced with a Nested Regional Climate Model. *Journal of Climate*, 7, 375-399, 1994.
- Johns T. C., R. E. Carnell, J. F. Crossley, J. M. Gregory, J. F. B. Mitchell, C. A. Senior, S. F. B. Tett, and R. A. Wood. The Second Hadley Centre Coupled Ocean-Atmosphere GCM: Model Description, Spinup, and Validation, *Climate Dynamics*, 13, 103-134, 1997.
- Laprise, R., D. Caya, M. Giguere, G. Bergeron, H. Cote, J.-P. Blanchet, G. J. Boer, and N. A. McFarlane. Climate and Climate Change in Western Canada as Simulated by the Canadian Regional Climate Model. *Atmosphere-Ocean*, 36, 119-167, 1998.
- Leung, L. R., and S. J. Ghan. Pacific Northwest Climate Sensitivity Simulated by a Regional Climate . Part I: Control Simulations. *Journal of Climate*, 12(7), 2010-2030, 1999a.
- Leung, L. R., and S. J. Ghan. Pacific Northwest Climate Sensitivity Simulated by a Regional Climate Model Driven by a GCM. Part II: 2 Times CO₂ Simulations. *Journal of Climate*, 12(7), 2031-2053, 1999b.

- Mantua, N. J., P. dell'Arciprete, and R. C. Francis. Patterns of Climate Variability in the Pacific Northwest: A Regional 20th Century Perspective. *Impacts of climate variability and climate change in the Pacific Northwest: An integrated assessment*, edited by E. L. Miles, Climate Impacts Group, University of Washington, Seattle, Washington, 1999.
- McFarlane, N. A., G. J. Boer, J. P. Blanchet, and M. Lazare. The Canadian Climate Centre Second-Generation General Circulation Model and its Equilibrium Climate. *Journal of Climate*, 5, 1013-1044, 1992.
- Miller, A. J., D. R. Cayan, T. P. Barnett, N. E. Graham, and J. M. Oberhuber. The 1976-1977 Climate Shift in the Pacific Ocean. *Oceanography*, 7, 21-26, 1994.
- Mitchell J. F. B., T. C. Johns, J. M. Gregory, and S. Tett. Climate Response to Increasing Levels of Greenhouse Gases and Sulphate Aerosols. *Nature*, 376, 501-504, 1995.
- Mitchell J. F. B., and T. C. Johns. On Modification of Global Warming by Sulfate Aerosols. *Journal of Climate*, 10(2), 245-267, 1997.
- Tett, S. B., P. A. Stott, M. R. Allen, W. J. Ingram, and J. F. B. Mitchell. Causes of Twentieth Century Temperature Change. *Nature*, 399, 569-572, 1999.

Alaska – Atmo.

- Boer, G. J., N. A. McFarlane, R. Laprise, J. D. Henderson, and J.-P. Blanchet. The Canadian Climate Centre Spectral Atmospheric General Circulation Model. *Atmosphere-Ocean*, 22(4), 397-429, 1984.
- Boer, G. J., G. M. Flato, M. C. Reader, and D. Ramsden. A Transient Climate Change Simulation with Historical and Projected Greenhouse Gas and Aerosol Forcing: Experimental Design and Comparison With the Instrumental Record for the 20th Century. *Climate Dynamics*, 16, 405-426, 1999a.
- Boer, G. J., G. M. Flato, and D. Ramsden. A Transient Climate Change Simulation With Historical and Projected Greenhouse Gas and Aerosol Forcing: Projected Climate for the 21st Century, *Climate Dynamics*, 16, 427-450, 1999b.
- Chase, T. N., R. A. Pielke, Sr., T. G. F. Kittel, R. R. Nemani, and S. W. Running. Simulated Impacts of Historical Land Cover Changes on Global Climate in Northern Winter. *Climate Dynamics*; 16(2-3), 93-105, 2000.
- Flato, G. M., G. J. Boer, W. G. Lee, N. A. McFarlane, D. Ramsden, M. C. Reader, and A. J. Weaver. The Canadian Centre for Climate Modelling and Analysis Global Coupled Model and its Climate. *Climate Dynamics*, 16(6), 451-467, 2000.
- Fyfe, J.C., G. J. Boer, and G. M. Flato. The Arctic and Antarctic Oscillations and their Projected Changes Under Global Warming. *Geophysical Research Letters*, 26(11), 1601-1604 (June 1), 1999.
- Gordon, H. B., and S. P. O'Farrell. Transient Climate Change in the CSIRO Coupled Model with Dynamic Sea Ice. *Monthly Weather Review*, 25(5), 875-907, 1997.

- Hurrell, J. W.. Influence of Variations in Extratropical Wintertime Teleconnections on Northern Hemisphere Temperature. *Geophysical Research Letters*, 23, 665-668, 1996.
- Hurrell, J. W., Decadal Trends in the North American Oscillations: Regional Temperatures and Precipitation. *Science*, 269, 676-679, 1995.
- Johns T. C., R. E. Carnell, J. F. Crossley, J. M. Gregory, J. F. B. Mitchell, C. A. Senior, S. F. B. Tett, and R. A. Wood. The Second Hadley Centre Coupled Ocean-Atmosphere GCM: Model Description, Spinup and Validation. *Climate Dynamics*, 13, 103-134, 1997
- Kattenberg, A., F. Giorgi, H. Grassl, G. A. Meehl, J. F. B. Mitchell, R. J. Stouffer, T. Tokioka, A. J. Weaver, and T. M. L. Wigley. Climate Models: Projections of Future Change. *Climate Change 1995: The Science of Climate Change, Contribution of Working Group I to the Second Assessment Report of the Inter-governmental Panel on Climate Change*, edited by J. T. Houghton, L. G. Meira Filho, B. A. Callander, N. Harris, A. Kattenberg, and K. Maskell, pp. 285-357, Cambridge University Press, Cambridge, United Kingdom, 1996.
- Lachenbruch A. H., and V. Marshall. Changing Climate: Geothermal Evidence from Permafrost in the Alaskan Arctic. *Science*, 234, 689-696, 1986.
- Lükewille, A., and R. F. Wright. Experimentally Increased Soil Temperature Causes Release of Nitrogen at a Boreal Forest Catchment in Southern Norway. *Global Change Biology*, 3, 13-21, 1997.
- McFarlane, N. A., G. J. Boer, J. P. Blanchet, and M. Lazare. The Canadian Climate Centre Second-Generation General Circulation Model and its Equilibrium Climate. *Journal of Climate*, 5, 1013-1044, 1992.
- Manabe, S. and R. J. Stouffer. Simulation of Abrupt Climate Change Induced by Freshwater Input to the North Atlantic Ocean. *Nature* 378(6553), 165-167, 1995.
- Mitchell J. F. B., T. C. Johns, J. M. Gregory, and S. Tett. Climate Response to Increasing Levels of Greenhouse Gases and Sulphate Aerosols. *Nature*, 376, 501-504, 1995.
- Mitchell J. F. B., and T. C. Johns. On Modification of Global Warming by Sulfate Aerosols. *Journal of Climate*, 10(2), 245-267, 1997.
- Parker, D. E., P. D. Jones, C. K. Folland, and A. Bevan. Interdecadal Changes of Surface Temperature Since the Late 19th Century. *Journal of Geophysical Research - Atmosphere*, 99(D7), 14373-14399, 1994 .
- Serreze, M.C., R. G. Barry, M. C. Rehder, and J. E. Walsh. Variability in Atmospheric Circulation and Moisture Flux Over the Arctic. *Philosophical Transactions of the Royal Society of London, Series A*, 352(1699), 215-225 (August 15), 1995b.
- Serreze, M. C., J. E. Walsh, F. S. Chapin, III, T. Osterkamp, M. Dyurgerov, V. Romanovsky, W. C. Oechel, J. Morison, T. Zhang, and R. G. Barry. Observational Evidence of Recent Changes in the Northern High-Latitude Environment. *Climatic Change*, 46, 159-207, 2000.
- Thompson, D. W. J., and J. M. Wallace. The Arctic Oscillation Signature in the Wintertime Geopotential Height and Temperature Fields. *Geophysical Research Letters*, 25, 1297-1300, 1998.

- Trenberth, K. E., and J. W. Hurrell. Decadal Atmosphere-Ocean Variation in the Pacific. *Climate Dynamics* 9(6), 303-319, 1994.
- Walker, D. A., et al.. A Major Arctic Soil pH Boundary: Implications for Energy and Trace Gas Fluxes. *Nature*, 394, 469-472, 1998.
- Weller, G., A. Lynch, T. Osterkamp, and G. Wendler. Climate Trends and Scenarios, *Implications of Global Change in Alaska and the Bering Sea Region: Proceedings of a Workshop, June 3-6 1997, edited by G. A. Weller and P. A. Anderson, Center for Global Change and Arctic System Research, University of Alaska, Fairbanks, Alaska, 1998.*

US Affiliated Islands – Atmo.

- Alvarez, R. (Ed.), Proceedings of the Climate Change and Extreme Events Workshop for the US South Atlantic Coastal and Caribbean Region. *A regional workshop, hosted by the International Hurricane Center, Florida International University, Miami, November 1998.*
- Bengtsson, L., M. Botzet, and M. Esch. Numerical Simulation of Intense Tropical Storms. *Hurricanes: Climate and Socioeconomic Impacts, edited by H. F. Diaz and R. S. Pulwarty, Springer-Verlag, New York, 292 pp., 1997*
- Collins, M., The El Niño Southern Oscillation in the Second Hadley Centre Coupled Model and its Response to Greenhouse Warming. *Journal of Climate*, in press, 2000.
- Emanuel, K. A.. Thermodynamic Control of Hurricane Intensity, *Nature*, 401, 665-669, 1999.
- Gray, W. M.. Atlantic Seasonal Hurricane Frequency, Part 1: El Niño and 30 mb Quasi- Biennial Oscillation Influences. *Monthly Weather Review*, 112, 1649-1668, 1984.
- Gray, W. M., J. D. Sheaffer, and C. W. Landsea Climate Trends Associated with Multidecadal Variability of Atlantic Hurricane Activity. *Hurricanes: Climate and Socioeconomic Impacts, edited by H. F. Diaz and R. S. Pulwarty, Springer-Verlag, New York, 292 pp., 1997.*
- Henderson-Sellers, A., et al.. Tropical Cyclones and Global Climate Change: A Post- IPCC Assessment. *Bulletin of the American Meteorological Society*, 79, 19-38, 1998.
- Knutson, T. R., and S. Manabe. Model Assessment of Decadal Variability and Trends in the Tropical Pacific Ocean. *Journal of Climate*, 11, 2273-2296, 1998.
- Knutson, T. R., and R. E. Tuleya. Increased Hurricane Intensities With CO₂ -Induced Warming as Simulated Using the GFDL Hurricane Prediction System. *Climate Dynamics*, in press, 2000.
- Knutson, T. R., R. E. Tuleya, and Y. Kurihara. Simulated Increase of Hurricane Intensities in a CO₂ -Warmed Climate. *Science*, 279, 1018-1020, 1998.

- Landsea, C. W., G. D. Bell, W. M. Gray, and S. B. Goldberg. The Extremely Active 1995 Atlantic Hurricane Season: Environmental Conditions and Verification of Seasonal Forecasts. *Monthly Weather Review*, 126, 1174-1193, 1995.
- Landsea, C. W., N. Nicholls, W. M. Gray, and L. A. Avila. Downward Trends in the Frequency of Intense Atlantic Hurricanes During the Past Five Decades. *Geophysical Research Letters*, 23, 1697-1700, 1996.
- Landsea, C. W., R. A. Pielke, Jr., A. M. Mestas-Nunez, and J. A. Knaff. Atlantic Basin Hurricanes: Indices of Climatic Changes. *Climatic Change*, 42, 89-129, 1999.
- Leatherman, S.. Opening Plenary Session Speaker #3 pg. 16. Proceedings of the Climate Change and Extreme Events Workshop for the US South Atlantic Coastal and Caribbean Region. *A regional workshop, hosted by the International Hurricane Center, Florida International University, Miami, Florida*, November 1998.
- Leatherman, S.. International Hurricane Center, Florida International University, 2000. (<http://www.ihc.fiu.edu/ihc/research/researchagenda.html>)
- Meehl, G. A., and W. M. Washington. El Niño-Like Climate Change in a Model With Increased Atmospheric CO₂ Concentrations. *Nature*, 382, 56-60, 1996.
- Meehl, G. A., F. Zwiers, J. Evans, T. Knutson, L. Mearns, and P. Whetton. Trends in Extreme Weather and Climate Events: Issues Related to Modeling Extremes in Projections of Future Climate Change. *Bulletin of the American Meteorological Society*, 81(3), 427-436, 2000.
- National Hurricane Center. (<http://www.nhc.noaa.gov/1995marilyn.html>), accessed 21 September, 2000.
- Pielke, R. A., Jr.. 2000. (http://www.esig.ucar.edu/HP_roger/sourcebook/hurricane.html)
- Timmermann, A., J. Oberhuber, A. Bacher, M. Esch, M. Latif, and E. Roeckner. Increased El Niño Frequency in a Climate Model Forced by Future Greenhouse Warming. *Nature*, 398, 694-696, 1999.
- Walker, L. R., D. J. Lodge, N. V. L. Brokaw, and R. B. Waide. An Introduction to Hurricanes in the Caribbean. *Biotropica*, 23, 313-316, 1991.

Native Peoples and Homelands – Atmo.

- Climate Change 1995: The Science of Climate Change, Contribution of Working Group I to the Second Assessment Report of the Intergovernmental Panel on Climate Change. *Edited by J. T., Houghton, L. G. Meira Filho, B. A. Callander, N. Harris, A. Kattenberg, and K. Maskell, IPCC (Intergovernmental Panel on Climate Change), Cambridge University Press, Cambridge, United Kingdom*, 572 pp., 1996a.

Research Sectors of the Report

Water Sector – Atmo.

- Carnell, R. E., and C. A. Senior. Changes in Mid-Latitude Variability Due to Increasing Greenhouse Gases and Sulphate Aerosols. *Climate Dynamics*, 4, pp. 369-383, 1998.
- Groisman, P. Ya, et al.. Changes in the Probability of Heavy Precipitation: Important Indicators of Climate Change. *Climatic Change*, 42, pp. 243-283, 1999.
- Hayden, B. P.. Extratropical Storms: Past, Present, and Future. *Proceedings of the AWRA Specialty Conference on Potential Consequences of Climate Variability and Change to Water Resources of the United States*, American Water Resources Association, Herndon, VA, pp. 93-96, 1999a.
- Hayden, B. P.. Climate Change and Extratropical Storminess in the United States: An Assessment. *Journal of the American Water Resources Association*, 35(6), pp.1387-1399, 1999b.
- Karl, T. R., R. W. Knight, D. R. Easterling, and R. G. Quayle. Indices of Climate Change for the United States. *Bulletin of the American Meteorological Society*, 77, pp. 279-292, 1996.
- Lambert, S. J.. The Effect of Enhanced Greenhouse Warming on Winter Cyclone Frequencies and Strengths. *Journal of Climate*, 8(5), pp. 1447-1452, 1995.
- Leung, R. L., and S. J. Ghan. Pacific Northwest Climate Sensitivity Simulated by a Regional Climate Model Driven by a GCM, Part I: Control Simulations. *Journal of Climate*, 12, pp. 12010-2030, 1999a.
- Leung, R. L., and S. J. Ghan. Pacific Northwest Climate Sensitivity Simulated by a Regional Climate Model Driven by a GCM, Part II: 2 X CO₂ Simulations. *Journal of Climate*, 12, pp. 2031-2053, 1999b.

Health Sector – Atmo.

- Air Quality Criteria for Ozone and Related Photochemical Oxidant: Volume I of III. *United States Environmental Protection Agency (USEPA), Office of Research and Development, Washington, DC*, 1996.
- Easterling, D. R., et al.. Maximum and Minimum Temperature Trends for the Globe. *Science*, 277, 364- 367, 1997.
- Houghton, J.. *Global Warming: The Complete Briefing*. Cambridge University Press, Cambridge, United Kingdom, 1997.
- Jones, P. D., D. M. New, D. E. Parker, S. Martin, and I. G. Rigor. Surface Air Temperature and its Changes Over the Past 150 Years. *Review of Geophysics*, 37, 173-200, 1999.

- Karl, T. R., and R. W. Knight. Secular Trends of Precipitation Amount, Frequency, and Intensity in the USA. *Bulletin of the American Meteorological Society*, 79, 231-241, 1998.
- Karl, T. R., R. W. Knight, D. R. Easterling, and R. G. Quayle. Indices of Climate Change for the United States. *Bulletin of the American Meteorological Society*, 77, 279-303, 1996.
- Karl, T. R., R. W. Knight, and N. Plummer. Trends in High-Frequency Climate Variability in the Twentieth Century. *Nature*, 377(6546), 217-20, 1995.
- Kirk-Davidoff, D.B., E. J. Hintsa, J. G. Anderson, and D. W. Keith. The Effect of Climate Change on Ozone Depletion Through Changes in Stratospheric Water Vapour. *Nature*, 402, 399- 401, 1999.
- Knutson, T. R., and R. E. Tuleya. Increased Hurricane Intensities With CO₂ -Induced Global Warming as Simulated Using the GFDL Hurricane Prediction System. *Climate Dynamics*, 15, 503-19, 1999.
- Landsberg, H. E.. The Urban Climate. *Academic Press, New York*, 1981.
- Meehl, G. A., F. Zwiers, J. Evans, T. Knutson, L. O. Mearns, and P. Whetton. Trends in Extreme Weather and Climate Events: Issues Related to Modeling Extremes in Projections of Future Climate Change. *Bulletin of the American Meteorological Society*, 2000.
- Morris, R. E., M. S. Gery, M. K. Liu, G. E. Moore, C. Daly, and S. M. Greenfield. Sensitivity of a Regional Oxidant Model to Variations in Climate Parameters. *The Potential Effects of Global Climate Change on the United States*, edited by J. B. Smith and D. A. Tirpak, US EPA, Office of Policy, Planning and Evaluation, Washington, DC, 1989.
- National Air Pollutant Emission Trends Update: 1970-1996. *United States Environmental Protection Agency (USEPA)*, Washington, DC, 1997a.
- National Air Quality and Emissions Trends Report, 1997. *United States Environmental Protection Agency (USEPA)*, Office of Air Quality Planning and Standards, Washington, DC, 1998a.
- Penner, J. E., P. S. Connell, D. J. Wuebbles, and C. C. Covey. Climate Change and its Interactions With Air Chemistry: Perspective and Research Needs. *The potential effects of global climate change on the United States*, edited by J. B. Smith and D. A. Tirpak, US EPA, Office of Policy, Planning and Evaluation, Washington, DC, 1989.
- Reconciling Observations of Global Temperature Change. *National Research Council (NRC)*, National Academy Press, Washington, DC, pp. 86, 2000.
- Robinson, P.. The Effects of Climate Change. *Global Climate Change Linkages: Acid Rain, Air Quality, and Stratospheric Ozone*, edited by J. C. White, Elsevier, New York, 1989.
- Shindell, D. T., D. Rind, and P. Lonergan. Increased Polar Stratospheric Ozone Losses and Delayed Eventual Recovery Owing to Increasing Greenhouse-Gas Concentrations. *Nature*, 392, 589-592, 1998.

Sillman, S., and P. J. Samson. Impact of Temperature on Oxidant Photochemistry in Urban, Polluted, Rural, and Remote Environments. *Journal of Geophysical Research*, 100, 11497-508, 1995.

Coastal Areas and Marine Resources Sector – Atmo.

Broeker, W. S.. Thermohaline Circulation, The Achilles Heel of Our Climate System: Will Man-Made CO₂ Upset the Current Balance?. *Science*, 278, 1582-1588, 1997.

Henderson-Sellers, A., H. Zhang, G. Berz, K. Emanuel, W. Gray, C. Landsea, G. Holland, J. Lighthill, S.-L. Shieh, P. Webster, and K. McGuffie. Tropical Cyclones and Global Climate Change: A Post-IPCC Assessment. *Bulletin of the American Meteorological Society* 79:19-38. 1998.

Karl, T. R., R. W. Knight, and N. Plummer. Trends in High-Frequency Climate Variability in the Twentieth Century. *Nature*, 377, 217-220, 1995a.

Karl, T. R., R. W. Knight, D. R. Easterling, and R. G. Quayle. Indices of Climate Change for the United States. *Bulletin of the American Meteorological Society*, 77, 279-292, 1995b.

Kerr, E. A.. Thermodynamic Control of Hurricane Intensity. *Nature*, 401, 665-669, 1999.

Knutson, T. R., R. E. Tuleya, and Y. Kurihara. Simulated Increase of Hurricane Intensities in a CO₂ -Warmed Climate. *Science*, 279, 1018-1020, 1998.

Landsea, C. W., N. Nicholls, W. M. Gray and L. A. Avila. Downward Trends in the Frequency of Intense Atlantic Hurricanes During the Past Five Decades. *Geophysical Research Letters*, 23, 1697-1700, 1996.

Taylor, K.. Rapid Climate Change. *American Scientist*, 87, 320-327, 1999.

Timmermann, A., J. Oberhuber, A. Bacher, M. Esch, M. Latif, and E. Roeckner. Increased El Niño Frequency in a Climate Model Forced by Future Greenhouse Warming. *Nature*, 398, 694- 696, 1999.

Wigley, T. M. L.. The Science of Climate Change: Global and US Perspectives. *Pew Center on Global Climate Change, Arlington, Virginia*, 1999.

Wood, R. A., A. B. Keen, J. F.B. Mitchell, and J. M. Gregory. Changing Spatial Structure of the Thermohaline Circulation in Response to Atmospheric CO₂ Forcing in a Climate Model. *Science*, 399, 572-575, 1999.

Zhang, K., et al.. East Coast Storm Surges Provide Unique Climate Record. *Eos, Transactions of the American Geophysical Union*, 78(37), 389, 396-97, 1997.

Forest Sector – Atmo.

Boubel, R. W, D. L. Fox, D. B. Turner, and A. C. Stern. Fundamentals of Air Pollution. *Academic Press Limited, San Diego, California*, 1994.

- Emanuel, K. A.. Thermodynamic Control of Hurricane Intensity. *Nature*, 401, (6754), 665-669, 1999.
- Etkin, D. A.. Beyond the Year 2000, More Tornadoes in Western Canada?, Implications from the Historical Record. *Natural Hazards*, 12, 19-27, 1995.
- Henderson-Sellers, A., H. Zhang, G. Berz, K. Emanuel, W. Gray, C. Landsea, G. Holland, J. Lighthill, S-L. Shieh, P. Webster, and K. McGuffie. Tropical Cyclones and Global Climate Change: A Post-IPCC Assessment. *Bulletin of the American Meteorological Society*, 79, 19-38, 1998.
- Karl T. R., R. W. Knight, and N. Plummer. Trends in High-Frequency Climate Variability in the Twentieth Century. *Nature*, 377, 217-220, 1995a.
- Karl T. R., R. W. Knight, D. R. Easterling, and R. G. Quayle. Indices of Climate Change for the United States. *Bulletin of the American Meteorological Society*, 77, 279-292, 1995b.
- Knutson, T. R., T. R. Tuleya, and Y. Kurihara. Simulated Increase of Hurricane Intensity in a CO₂-Warmed Climate. *Science*, 279, 1018-1020, 1998.
- Knutson, T. R., and R. E. Tuleya. Increased Hurricane Intensities with CO₂-Induced Warming as Simulated Using the GFDL Hurricane Prediction System. *Climate Dynamics*, 15, 503-519, 1999.
- Royer, J. F., F. Chauvin, B. Timbal, P. Araspin, and D. Grimal. A GCM Study of the Impact of Greenhouse Gas Increase on the Frequency of Occurrence of Tropical Cyclones. *Climatic Change*, 38, 307-343, 1998.
- Walsh K., and A. B. Pittock. Potential Changes in Tropical Storms, Hurricanes, and Extreme Rainfall Events as a Result of Climate Change. *Climatic Change*, 39, 199-213, 1998.

Biosphere

Scenarios Used for the Report

Scenarios for Climate Variability and Change – Bio.

- Kittel, T. G. F., N. A. Rosenbloom, T. H. Painter, D. S. Schimel, and VEMAP participants. The VEMAP Integrated Database for Modeling United States Ecosystem/Vegetation Sensitivity to Climate Change. *Journal of Biogeography*, 22, 857-862. 1995.
- Kittel, T. G. F., J. A. Royle, C. Daly, N. A. Rosenbloom, W. P. Gibson, H. H. Fisher, D. S. Schimel, L. M. Berliner, and VEMAP participants. A Gridded Historical (1895-1993) Bioclimate Dataset for the Conterminous United States. *Proceedings of the 10th Conference on Applied Climatology*, American Meteorological Society, Boston, Massachusetts, pp. 219-222. 1997.

Kleypas, J. A., R. W. Buddemeier, D. Archer, J. P. Gattuso, C. Langdon, and B. N. Opdyke. Geochemical Consequences of Increased Atmospheric Carbon Dioxide on Coral Reefs, *Science*, 284, 118-120. 1999.

VEMAP(Vegetation/Ecosystem Modeling and Analyses Project) Members. Comparing Biogeography and Biogeochemistry Models in a Continental-Scale Study of Terrestrial Ecosystem Responses to Climate Change and CO₂ Doubling. *Global Biogeochemical Cycles*, 9, 407-437. 1995.

Vegetation and Biogeochemical Scenarios – Bio.

Bachelet, D., R. P. Neilson, J. M. Lenihan, and R. J. Drapek. Climate Change Effects on Vegetation Distribution and Carbon Budget in the US. *Ecosystems*, in review. 2000.

Daly C., D. Bachelet, J. M. Lenihan, R. P. Neilson, W. Parton, and D. Ojima. Dynamic Simulation of Tree-Grazing Interactions for Global Change Studies. *Ecological Applications*, 10(2), 449-469, 2000.

Haxeltine A., and I. C. Prentice. BIOME3: An Equilibrium Terrestrial Biosphere Model Based on Ecophysiological Constraints, Resource Availability, and Competition Among Plant Functional Types. *Global Biogeochemical Cycles*, 10(4), 693-709. 1996.

Holland, E. A., W. J. Parton, J. K. Delting, and D. L. Coppock. Physiological Response of Plant Population to Herbivory and their Consequences for Ecosystem Nutrient Flow. *American Naturalist*, 140, 685-706. 1992.

Jenkins, J. C., R. A. Birdsey, and Y. Pan. Biomass and NPP Estimations for the Mid-Atlantic Region (USA) Using Plot-Level Forest Inventory. *Ecological Applications*, in review. 2000.

Lenihan, J. M., C. Daly, D. Bachelet, and R. P. Neilson. Simulating Broad-Scale Fire Severity in a Dynamic Global Vegetation Model, *Northwest Science*, 72, 91-103. 1998.

Neilson, R. P., and R. J. Drapek. Potentially Complex Biosphere Responses to Transient Global Warming. *Global Change Biology*, 4, 505-521. 1998.

Neilson, R. P., G. A. King, and G. Koerper. Toward a Rule-Based Biome Model. *Landscape Ecology*, 7, 27-43. 1992.

Neilson, R. P.: A Model for Predicting Continental-Scale Vegetation Distribution and Water Balance. *Ecological Applications*, 5, 362-385. 1995.

Neilson, R. P., and D. Marks. A Global Perspective of Regional Vegetation and Hydrologic Sensitivities from Climate Change. *Journal of Vegetation Science* 5, 715-730. 1995.

Neilson, R.P., D. Bachelet, J.M. Lenihan and R.J. Drapek. The VEMAP Models and Potentially Complex Biosphere—Atmosphere Feedbacks: Is There a Threshold Global. *paper presented at AGY Spring meeting*. 2000.

- Ojima, D.S., W. J. Parton, D. S. Schimel, and C. E. Owensby. Simulated Impacts of Annual Burning on Prairie Ecosystems. *Fire in North American Tallgrass Prairies*, edited by S. L. Collins and L. L. Wallace, 175 pp., University of Oklahoma Press, Norman, Oklahoma. 1990.
- Pan, Y., et al.. Modeled Responses of Terrestrial Ecosystems to Elevated Atmospheric CO₂: A Comparison of Simulations by the Biogeochemistry Models of the Vegetation/Ecosystem Modeling and Analysis Project (VEMAP). *Oecologia*, 114, 389-404. 1998.
- Parton, W. J., D. S. Schimel, C. V. Cole, and D. S. Ojima. Analysis of Factors Controlling Soil Organic Levels of Grasslands in the Great Plains. *Soil Science Society of America Journal*, 51, 1173-1179. 1987.
- Parton, W. J., et al.. Observations and Modeling of Biomass and Soil Organic Matter Dynamics for the Grassland Biome Worldwide. *Global Biogeochemical Cycles*, 7, 785-809. 1993.
- Pierce, L. L.. Scaling Ecosystem Models from Watersheds to Regions: Tradeoffs Between Model Complexity and Accuracy. *Ph.D. dissertation, School of Forestry, University of Montana*, 146 pp. 1993
- Running, S. W., and J. C. Coughlan. A General Model of Forest Ecosystem Processes for Regional Applications, I. Hydrologic Balance, Canopy Gas Exchange, and Primary Production Processes. *Ecological Modelling*, 42, 125-154. 1988.
- Running, S. W., and G. T. Gower. FOREST-BGC, A General Model of Forest Ecosystem Processes for Regional Applications, II. Dynamic Carbon Allocation and Nitrogen Budgets, *Tree Physiology*, 9, 147-160. 1991.
- Running, S. W., and E. R. Hunt, Jr.. Generalization of a Forest Ecosystem Process Model for Other Biomes, BIOME-BGC, and an Application for Global-Scale Models. *Scaling Processes Between Leaf and Landscape Levels*, edited by J. R. Ehleringer and C. Field, pp. 141-158, Academic Press, San Diego, California. 1993.
- Running, S. W.. Testing FOREST-BGC Ecosystem Process Simulations Across a Climatic Gradient in Oregon, *Ecological Applications* 4, 238-247. 1994 .
- Thonicke, K. S., S. Venevsky, S. Sitch, and W. Cramer. The Role of Fire Disturbance for Global Vegetation Dynamics: Coupling Fire into a Dynamic Global Vegetation Model. *Global Change Biology*, in review. 2000.
- VEMAP Members. Vegetation/Ecosystem Modeling and Analysis Project: Comparing Biogeography and Biogeochemistry Models in a Continental-Scale Study of Terrestrial Ecosystem Responses to Climate Change and CO₂ Doubling. *Global Biogeochemical Cycles*, 4, 407-437. 1995.
- Vitousek, P. M., T. Fahey, D. W. Johnson, and M. J. Swift. Element Interactions in Forest Ecosystems: Succession, Allometry, and Input-Output Budgets. *Biogeochemistry*, 5, 7-34. 1988.
- White, J. D., and S. W. Running. Testing Scale Dependent Assumptions in Regional Ecosystem Simulations. *Journal Vegetation Science*, 5, 687-702. 1995.

Xiao, X., J. M. Melillo, D. W. Kicklighter, A. D. McGuire, R. G. Prinn, C. Wang, P. H. Stone, and A. Sokolov. Transient Climate Change and Net Ecosystem Production of the Terrestrial Biosphere. *Global Biogeochemical Cycles*, 12, 345-360. 1998.

Socioeconomic Context for Climate Impact Assessments – Bio.

Schneider, S. H., and R. Londer. The Coevolution of Climate and Life. *Sierra Club Books, San Francisco*. 1984.

Report's Regional Elements of the U.S.

Northeast Region – Bio.

Currie, D. J.. Energy and Large-Scale Patterns of Animal- and Plant-Species Richness. *The American Naturalist*, 137, 27-49. 1991.

Drake, B. G., G. Peresta, E. Beugeling, and R. Matamala. Long-Term Elevated CO₂ Exposure in a Chesapeake Bay Wetland: Ecosystem Gas Exchange, Primary Production, and Tissue Nitrogen. *Carbon Dioxide and Terrestrial Ecosystems*, edited by G.W. Koch and H. A. Mooney, Academic Press, San Diego, California, 197-214. 1996.

Funderbunk, S. L., S. J. Jordan, J. A. Mihursky, and D. Riley (Eds.). Habitat Requirements for Chesapeake Bay Living Resources, 2nd edition. *Chesapeake Research Consortium, Inc., Solomons, Maryland*. 1991.

Gibson, J. R.. Modeling Chesapeake Bay Salinity and Phytoplankton Dynamics in Response to Varying Climate. *M.S. thesis, Penn State University, University Park, PA*. 1999.

Jones, K. B., et al.. An Ecological Assessment of the United States Mid-Atlantic Region: A Landscape Atlas. *US EPA, Office of Research and Development: Washington, DC*, (Document #EPA/600/R-97/130). 1997

Kittel, T. G. F., J. A. Royle, C. Daly, N. A. Rosenbloom, W. P. Gibson, H. H. Fisher, D. S. Schimel, L. M. Berliner, and VEMAP2 participants. A Gridded Historical (1895-1993) Bioclimate Dataset for the Conterminous United States. *Proceedings of the 10th Conference on Applied Climatology, October 20-24, 1997, Reno, Nevada, American Meteorological Society, Boston, Massachusetts*, 219-222. 1997.

Neilson, R. P., and R. J. Drapek, Potentially Complex Biosphere Responses to Transient Global Warming. *Global Change Biology*, 4, 505-521. 1998.

Perry, M. C., and A. S. Deller. Review of Factors Affecting the Distribution and Abundance of Waterfowl in Shallow-Water Habitats of Chesapeake Bay, *Estuaries*, 19, 272-278. 1996.

- Perry, M. C., and A. S. Deller, Waterfowl Population Trends in the Chesapeake Bay Area. *Toward a Sustainable Coastal Watershed: The Chesapeake Experiments. Proceedings of a Conference, Chesapeake Research Consortium Publication No. 149, edited by P. Hill and S. Nelson, Chesapeake Research Consortium, Inc., Edgewater, Maryland. 1995.*
- Perry, M. C., (Ed.), F. M. Uhler. Food Habits and Distribution of Wintering Canvasbacks, *Aythya Valisinerina*, on Chesapeake Bay. *Estuaries*, 11, 57-67. 1988.
- Roth, S., E. P. McDonald, and R. L. Lindroth, Atmospheric CO₂ and Soil Water Availability Consequences for Tree-Insect Interactions. *Canadian Journal of Forest Research*, 27, 1281- 1290. 1997.
- Vegetation/Ecosystem Modeling and Analysis Project (VEMAP) members. Comparing Biogeography and Biogeochemistry Models in a Continental-Scale Study of Terrestrial Ecosystem Responses to Climate Change and CO₂ Doubling. *Global Biogeochemical Cycles*, 9, 407-437. 1995.
- Walker, H. A., J. S. Latimer, and E. H. Dettman. Assessing the Effects of Natural and Anthropogenic Stressors in the Potomac Estuary: Implications for Long-Term Monitoring. *Environmental Monitoring and Assessment*, in press, 2000.
- Williamson, M.. Invasions. *Ecography*, 22, 5-12. 1999.

Southeast Region – Bio.

- Aber, J. D., C. Driscoll, C. A. Federer, R. Lathrop, G. Lovett, J. M. Melillo, P. Steudler, and J. Vogelmann. A Strategy for the Regional Analysis of the Effects of Physical and Chemical Climate Change on Biogeochemical Cycles in Northeastern (U.S.) Forests. *Ecological Modeling*, 67, 37-47. 1993.
- Burkett, V., and J. Kusler. Climate Change: Potential Impacts and Interactions in Wetlands of the United States. *Journal of American Water Resources Association*, 36(2), 313-320. 2000.
- Cahoon, D. R., J. W. Day, D. J. Reed, and R. S. Young. Global Climate Change and Sea-Level Rise: Estimating the Potential for Submergence of Coastal Wetlands. *Vulnerability of Coastal Wetlands in the Southeastern United States: Climate Change Research Results, US Geological Survey, Biological science report USGS/BRD/BSR 1998-0002, pp. 21-34. 1998.*
- Currie, D. J.. Energy and Large-Scale Patterns of Animal- and Plant-Species Richness *American Naturalist*, 137(1), 27-49. 1991.
- Dahl, T. E.. Wetland Losses in the United States: 1780's to 1980's. *US Department of Interior, Fish and Wildlife Service, Washington DC, 21 pp. 1990.*
- Hefner, J. M.. Southeast Wetlands: Status and Trends, Mid-1970's to Mid-1980's. *US Department of Interior, Fish and Wildlife Service, Atlanta, Georgia, 32 pp. 1994.*
- McGowan, J. A., D. R. Cayan, and L. M. Dorman. Climate-Ocean Variability and Ecosystem Response in the Northeast Pacific, *Science*, 281, 210-217. 1998.

- McNulty, S. G., P. L. Lorio, Jr., M. P. Ayres, and J. D. Reeve. Predictions of Southern Pine Beetle Populations Using a Forest Ecosystem Model. *The Productivity and Sustainability of Southern Forest Ecosystems in a Changing Environment*, edited by R. Mickler and S. Fox, Springer Publishing, pp. 617-634. 1998.
- Mulholland, P. J., G. R. Best, C. C. Coutant, G. M. Hornberger, J. L. Meyer, P. J. Robinson, J. R. Stenberg, R. E. Turner, F. Vera-Herra, and R. G. Wetzel. Effects of Climate Change on Freshwater Ecosystems of the Southeastern United States and the Gulf Coast of Mexico. *Hydrological Processes*, 11, 949-970. 1997.
- Nijs, I., I. Impens, and T. Behaghe. Leaf and Canopy Responses of *Lolium Perenne* to Long-Term Elevated Atmospheric Carbon-Dioxide Concentration, *Planta* 177, 312-320. 1988.
- Ricketts, T. H., E. Dinerstein, D. M. Olson, and C. Loucks. Who's Where in North America? Patterns of Species Richness and the Utility of Indicator Taxa for Conservation. *BioScience*, 49(5), 369-381, 1999.
- Short, F. T., and H. A. Neckles. The Effects of Global Climate Change on Seagrasses, *Aquatic Botany*, 63, 169-196. 1999.

Midwest Region – Bio.

- Botts, L., and B. Krushelnicki. The Great Lakes: An Environmental Atlas and Resource Book. *US Environmental Protection Agency and Environment Canada, Downsview, Ontario*, 44 pp.. 1987.
- Brown, D. G. US National Assessment, Great Lakes Regional Summary Report, Land Ecology. *US Global Change Research Program*, pp. 51-57, 1999.
- Great Lakes and Precambrian Shield Region. Chap. 2, Freshwater Ecosystems and Climate Change in North America: A Regional Assessment, edited by C.E. Cushing, John Wiley & Sons, Chichester, England, pp. 7-53, 1997. [*Papers in this volume were originally published in Hydrological Processes*, 11(8), 819-1067, 1997.]
- Moll, R.. Reports of the Working Groups: Ecosystems Health. *Adapting to Climate Change and Variability in the Great Lakes-St. Lawrence Basin: Proceedings of a Binational Symposium*, edited by L. D. Mortsch, S. Quon, L. Craig, B. Mills, and B. Wrenn, Environment Canada, Downsview, Ontario. 1998.
- Mortsch, L. D.. Assessing the Impact of Climate Change on the Great Lakes Shoreline Wetlands. *Climatic Change*, 40, 391-416. 1998.
- Regional Ecosystem Analysis, Puget Sound Metropolitan Area. *Final Report, Urban Forestry Center, American Forests*, 8 pp.. 1998 <http://www.amfor.org/ufc/uea/report.html>,
- Robinson, S. K.. The Case of the Missing Songbirds. *Consequences*, 3, 2-15. 1997.
- Sadof, C., and M. Raupp. Biological Controls in the Urban Forest. *Midwest Biol Cont. News*, (5)12, 1-5. 1999.

Secrest, H. C., H. J. Mac Aloney, and R. C. Lorenz. Causes of the Decadence of Hemlock at the Menominee Indian Reservation, Wisconsin, *Journal of Forestry*, 39, 3-12. 1941.

Wong, K.. A Pixel is Worth 1000 Words: Satellite Images Reveal Startling Tree Loss in American Cities. *US News and World Report*. July 19, 1999.

Great Plains Region – Bio.

Bethke, R. W., and T. D. Nudds. Effects of Climate Change and Land Use on Duck Abundance in Canadian Prairie-Park Lands. *Ecological Applications*, 5, 588-600. 1995.

Burke, I. C., T. G. F. Kittel, W. K. Lauenroth, P. Snook, C. M. Yonker, and W. J. Parton. Regional Analysis of the Central Great Plains: Sensitivity to Climate Variability. *BioScience*, 41, 685-692, 1990.

Larson, D. L.. Potential Effects of Anthropogenic Greenhouse Gases on Avian Habitats and Populations in the Northern Great Plains. *American Midland Naturalist*, 131, 330-346. 1994.

Mack, M., C., and C. M. D'Antonio. Impacts of Biological Invasions on Disturbance Regimes. *Trends in Ecology and Evolution*, 13, 195-198. 1998.

Ostlie, W. R., R. E. Schneider, J. M. Aldrich, T. M. Faust, R. L. B. McKim, S. J. Chaplin. The Status of Biodiversity in the Great Plains. *The Nature Conservancy, Arlington, Virginia*. 1997.

Schimel, D. S., W. J. Parton, T. G. F. Kittel, D. S. Ojima, and C. V. Cole. Grassland Biogeochemistry: Links to Atmospheric Processes. *Climate Change*, 17, 13-25. 1990.

Schimel, D. S., T. G. F. Kittel, and W. J. Parton. Terrestrial Biogeochemical Cycles: Global Interactions with the Atmosphere and Hydrology. *Tellus*, 43AB, 188-203. 1991a.

Schimel, D. S., T. G. F. Kittel, A. K. Knapp, T. R. Seastedt, W. J. Parton, and V. B. Brown. Physiological Interactions Along Resource Gradients in a Tallgrass Prairie. *Ecology*, 72, 672-684. 1991b.

Sorenson, L.G., R. Goldberg, T. L. Root, and M. G. Anderson. Potential Effects of Global Warming on Waterfowl Populations Breeding in the Northern Great Plains. *Climatic Change*, 40, 343-369. 1998.

Stohlgren, T. J., K. A. Bull, Y. Otsuki, C. A. Villa, and L. Lee. Riparian Zones as Havens for Exotic Plant Species in the Central Grasslands. *Plant Ecology*, 138, 113-125. 1998.

Stohlgren, T. J., D. Binkley, G. W. Chong, M. A. Kalkhan, L. D. Schell, K. A. Bull, Y. Otsuki, G. Newman, M. Bashkin, and Y. Son. Exotic Plants Species Invade Hot Spots of Native Plant Diversity. *Ecological Monographs*, 69, 25-46. 1999.

VEMAP members. Vegetation/Ecosystem Modeling and Analysis Project: Comparing Biogeography and Biogeochemistry Models in a Continental-Scale Study of Terrestrial Ecosystem Responses to Climate Change and CO₂ Doubling. *Global Biogeochemical Cycles*, 9, 477-437. 1995.

Vitousek, P. M., C. M. D'Antinio, L. L. Loope, and R. Westbrooks. Biological Invasions as Global Environmental Change. *American Scientist*, 84, 468-478. 1996.

Westbrooks, R. G.. Invasive Plants: Changing the Landscape of America: Fact Book. *Federal Interagency Committee for the Management of Noxious and Exotic Weeds*, Washington, DC. 1998.

West Region – Bio.

Chapin, F. S., et al.. Consequences of Change Biodiversity. *Nature* 405, 234-242. 2000.

Galbraith, H., D. Park, R. Jones, J. Clough, B. Harrington, S. Herrod-Julius, and G. Page, Potential Impacts of Sea Level Rise Due to Global Climate Change on Migratory Shorebird Populations at Coastal Sites in North America. *Report to US Environmental Protection Agency, Stratus Consulting Inc., Boulder, Colorado*. Draft of April 19, 2000.

Grimm, N. B., A. Chacon, C. N. Dahm, S. W. Hostetler, O. T. Lind, P. L. Starkweather, and W. W. Wurtsbaugh. Sensitivity of Aquatic Ecosystems to Climatic and Anthropogenic Changes: The Basin and Range, American Southwest and Mexico, *Hydrologic Processes*, 11, 1023-1041. 1997.

Hansen, A. J., R. P. Neilson, V. Dale, C. Flather, L. Iverson, D. J. Currie, S. Shafer, R. Cook, and P. J. Bartlein. Global Change in Forests: Responses of Species, Communities, and Biomes, *BioScience*, in press. 2000.

Kattlemann, R., and M. Embury. Riparian Areas and Wetlands, *Sierra Nevada Ecosystem Project: Final Report to Congress, Volume III, Assessments, Commissioned Reports, and Background Information*, Centers for Water and Wildland Resources, University of California, Davis. 1996.

Listed Species by State and Territory, *US Fish and Wildlife Service*.
(<http://www.fws.gov/r9endspp/listmap.html>), Accessed March 17, 1999.

Meyer, J. L., M. J. Sale, P. J. Mulholland, and N. L. Poff. Impacts of Climate Change on Aquatic Ecosystem Functioning and Health. *Journal of the American Water Resources Association*, 35(6), 1373-1386. 1999.

Murphy, D. D., and S. B. Weiss. Effects of Climate Change on Biological Diversity in Western North America: Species Losses and Mechanisms. *Global Warming and Biological Diversity*, edited by R. L. Peters and T. E. Lovejoy, Yale University Press, New Haven, Connecticut, pp. 355-368. 1992.

Myers, N., R. A. Mittermeier, C. G. Mittermeier, G. A. B. da Fonseca, and J. Kent. Biodiversity Hotspots for Conservation Priorities, *Nature*, 403, 853-858. 2000.

National Park Service (NPS). March 17, 1999.
(<http://www.nps.gov/grca/>),

Neilson, R. P., and R. J. Drapek. Potentially Complex Biosphere Responses to Transient Global Warming. *Global Change Biology*, 4, 505-521, 1998.

- Parmesan, C..Climate and Species' Range, *Nature*, 382, 765-766, 1996.
- Sagarin, R. D., J. P. Barry, S. E. Gilman, and C. H. Baxter. Climate Related Changes in an Intertidal Community Over Short and Long Time Scales. *Ecological Monographs*, 69, 465- 490.
- Tausch, R. J., C. L. Nowak, and R. S. Nowak. Climate Change and Plant Species Responses Over the Quaternary: Implications for Ecosystems Management. *Interior West Global Change Workshop*, edited by R. W. Tinus, *General Technical Report RM-GTR-262, USDA Forest Service, Fort Collins, Colorado*. 1995.
- The Nature Conservancy, Accessed March 17, 1999.
(<http://www.consci.tnc.org/library/pubs/rptcard/map.html>),
- VEMAP Tables of Means and Variances. *National Center for Atmospheric Research*. October 11, 1999.
(<http://www.cgd.ucar.edu/naco/vemap/vemtab.html>)
- Walker, B., and W. Steffen. An Overview of the Implications of Global Change for Natural and Managed Terrestrial Ecosystems, *Conservation Ecology Vol 1; Issue 2*. 1997
(<http://www.consecol.org/Journal/vol1/iss2/art2/>)
- Yoshiyama, R. M., E. R. Gerstung, F. W. Fisher, and P. B. Moyle. Historical and Present Distribution of Chinook Salmon in the Central Valley Drainage of California. *Sierra Nevada Ecosystem Project: Final Report to Congress, Volume III, Assessments, Commissioned Reports, and Background Information, Centers for Water and Wildland Resources, University of California, Davis*. 1996.

Pacific Northwest Region – Bio.

- Agee, J. K.. Fire Ecology of Pacific Northwest Forests. *Island Press, Washington, DC*, 1993.
- Bachelet, D., M. Brugnack, and R. P. Neilson. Sensitivity of a Biogeography Model to Soil Properties. *Ecological Modeling*, 109, 77-98, 1998.
- Baker, P. F., T. P. Speed, and F. K. Ligon. Estimating the Influence of Temperature on the Survival of Chinook Salmon Smolts Migrating Through the Sacramento San Joaquin River Delta of California, *Canadian Journal of Fisheries and Aquatic Sciences*, 52, 855-863, 1995.
- Baker, W. L.. Long-Term Response of Disturbance Landscapes to Human Intervention and Global Change. *Landscape Ecology*, 10,143-159, 1989.
- Beechie, T., E. Beamer, and L. Wasserman. Estimating Coho Salmon Rearing Habitat and Smolt Production Losses in a Large River Basin, and Implications for Habitat Restoration, *North American Journal of Fisheries Management*, 14, 797-811, 1994.
- Bottom, D. L.. Restoring Salmon Ecosystems: Myth and Reality. *Restoration and Management Notes*, 13, 162-170, 1995.

- Bury, R. B.. Vertebrates in the Pacific Northwest: Species Richness, Endemism, and Dependency on Old-Growth Forests. *Biological Diversity: Problems and Challenges*, edited by S. K. Majumdar, F. J. Brenner, J. E. Lovich, J. F. Schalles, and E. W. Miller, pp. 392-404, Pennsylvania Academy of Science, Easton, Pennsylvania, 1994.
- Carter, M. F., and K. Barker. An Interactive Database for Setting Conservation Priorities for Western Neotropical Migrants. *Status and Management of Neotropical Migratory Birds*, edited by D. M. Finch and P. W. Stangel, US Forest Service General Technical Report RM-GTR-229, pp. 120- 144, Rocky Mountain Forest and Range Experiment Station, Ft. Collins, Colorado, 1993.
- Daly C, D. Bachelet J. M. Lenihan, R. P. Neilson, W. Parton and D. Ojima. Dynamic Simulation of Tree-Grass Interactions for Global Change Studies. *Ecological Applications*, 10(2), 449-469, 2000
- Detling, L. E.. Relic Islands of Xeric Flora West of the Cascade Mountains in Oregon. *Madrono*, 12, 39-47, 1953.
- Detling, L. E.. Historical Background of the Flora of the Pacific Northwest. *Bulletin No. 13*, Museum of Natural History, University of Oregon, Eugene, Oregon, 1968..
- Emmett, R. L., and R. D. Brodeur. Recent Changes in the Pelagic Nekton Community off Oregon and Washington in Relation to Some Physical Oceanographic Conditions. *North Pacific Anadromous Fish Commission, Bull. No. 2*, in press, 2000.
- Feist, B. E., and C. A. Simenstad. Expansion Rates and Recruitment Frequency of Exotic Smooth Cordgrass, (*Spartina alterniflora*) (Loisel) Colonizing Unvegetated Littoral Flats in Willapa Bay, Washington. *Estuaries*, 23(2), 268-275, 2000.
- Francis, R. C.. Sustainable Use of Salmon: Its Effects on Biodiversity and Ecosystem Function. *Harvesting Wild Species --- Implications for Biodiversity Conservation*, edited by C. H. Freeze, pp. 626-670, Johns Hopkins University Press, Baltimore, Maryland, 1997.
- Francis, R. C., S. R. Hare, A. B. Hollowed, and W. S. Wooster. Effects of Interdecadal Climate Variability on the Oceanic Ecosystems of the Northeast Pacific. *Fisheries Oceanography* 7, 1-21, 1998.
- Franklin, J. F., and C. T. Dyrness. Natural Vegetation of Oregon and Washington. *Oregon State University Press, Corvallis, Oregon*, 1973.
- Franklin, J. F., and R. T. T. Forman. Creating Landscape Patterns by Forest Cutting: Ecological Consequences and Principles. *Landscape Ecology*, 1, 5-18, 1987.
- Franklin, J. F., W. H. Moir, G. W. Douglas, and C. Wiberg. Invasion of Subalpine Meadows by Trees in the Cascade Range. *Arctic and Alpine Research*, 3, 215-224, 1971.
- Gardner, R. H., W. W. Hargrove, M. G. Turner, and W. H. Romme. Climate Change, Disturbances, and Landscape Dynamics. *Global Change and Terrestrial Ecosystems*, edited by B. Walker and W. Steffen, pp., 149-172, Cambridge University Press, Cambridge, United Kingdom, 1996.

- Gholz, H. L.. Environmental Limits on Aboveground Net Primary Production, Leaf Area, and Biomass in Vegetation Zones of the Pacific Northwest. *Ecology*, 63, 469, 1982.
- Hargreaves, B. N.. Early Ocean Survival of Salmon off British Columbia and Impacts of the 1983 and 1991-1995 El Niño Events. *Estuarine and Ocean Survival of Northeast Pacific Salmon: Proceedings of the Workshop*, edited by R.L. Emmett and M. H. Schiewe, pp., 197-211, NOAA Tech. Memo., NMFS-NWFSC-29, Seattle, Washington, 1997.
- Larsson, S.. Stressful Times for the Plant Stress-Insect Performance Hypothesis. *Oikos*, 56, 277-283, 1989.
- Law, B. E., R. H. Waring, P. M. Anthoni, and J. D. Abers. Measurements of Gross and Net Ecosystem Productivity and Water Vapor Exchange of a Pinus Ponderosa Ecosystem, and an Evaluation of Two Generalized Models. *Global Change Biology*, 5, 1-15, 1999.
- Mac, M. J., P. A. Opler, C. E. Puckett Haecker, and P. D. Doran (Eds.). Status and Trends of the Nation's Biological Resources. *US Geological Survey, US Department of the Interior, Biological Resources Division, Reston, Virginia*, 1998.
- McCullough, D. A.. A Review and Synthesis of Effects of Alterations to the Water Temperature Regime on Freshwater Life Stages of Salmonids, with Special Reference to Chinook Salmon. *EPA Region 10 Report 910-R-99-010*, July 1999.
- McKenzie, D., D. L. Peterson, and E. Alvarado. Predicting the Effect of Fire on Large-Scale Vegetation Patterns in North America. *USDA Forest Service Research Paper PNW-489, Fort Collins, Colorado*, 1996.
- Mooney, H. A., J. Canadell, F. S. Chapin, III, J. R. Ehleringer, C. H.. Korner, R. E. McMurtrie, W. J. Parton, L. F. Pitelka, and E.-D. Schulze. Ecosystem Physiology Responses to Global Change. *The Terrestrial Biosphere and Global Change: Implications for Managed and Unmanaged Ecosystems*, edited by B. Walker, W. Steffen, J. Canadell, and J. Ingram, pp.141-189, Cambridge University Press, Cambridge, UK, 1999.
- Morse, L. E., J. T. Kartesz, and L. S. Kutner. Native Vascular Plants. *Our Living Resources: A report to the Nation on the distribution, abundance, and health of US plants, animals, and ecosystems*, edited by E. T. LaRoe, G. S. Farris, C. E. Puckett, P. D. Doran, M. J. Mac, US National Biological Service, Washington, DC, 1995.
- Neilson, R. P., and R. J. Drapek. Potentially Complex Biosphere Responses to Transient Global Warming. *Global Change Biology*, 4, 101-117, 1998.
- Neilson R. P., I. C. Prentice, B. Smith, T. G. F. Kittel, and D. Viner. Simulated Changes in Vegetation Distribution Under Global Warming *The Regional Impacts of Climate Change: An Assessment of Vulnerability*, edited by R. T. Watson, M. C. Zinyowera, R. H. Moss, and D. J. Dokken, pp. 439-456, Cambridge University Press, Cambridge, United Kingdom, 1998. National Research Council. *Upstream*, National Academy Press, Washington, DC, 1996.
- Noss, R. F., E. T. LaRoe, III, and J. M. Scott. Endangered Ecosystems of the United States: A Preliminary Assessment of Loss and Degradation. *National Biological Service Biological Report 28*, Washington, DC, 58 pp., 1995.

- Parsons, G. L., G. Cassis, A. R. Moldenke, J. D. Lattin, N. H. Anderson, J. C. Miller, P. Hammond, and T. D. Schowalter. Invertebrates of the H. J. Andrews Experimental Forest, Western Cascade Range, Oregon, Part V: An Annotated List of Insects and Other Arthropods. *US Forest Service General Technical Report PNW-GTR-290, Pacific Northwest Research Station, Portland, Oregon*, 168 pp., 1991.
- Pearcy, W. G.. Ocean Ecology of North Pacific Salmonids. *University of Washington Press, Seattle, Washington*, 1992.
- Pinnix, W.. Climate and Puget Sound. *JISAO/SMA Year 3 report, Climate Impacts Group, University of Washington, Seattle, Washington*, 1998.
- Price, P.W.. The Plant Vigor Hypothesis and Herbivore Attack. *Oikos*, 62, 244-251, 1991.
- Quinn, T. P., and D. J. Adams. Environmental Changes Affecting the Migratory Timing of American Shad and Sockeye Salmon. *Ecology*, 77, 1151-1162, 1996.
- Reeves, G. H., F. H. Everest, and T. E. Nickelson. Identification of Physical Habitats Limiting the Production of Coho Salmon in Western Oregon and Washington. *USDA Forest Service General Technical Report PNW-245, US Forest Service, Corvallis, Oregon*, 1989.
- Ryan, K. C.. Vegetation and Wildland Fire: Implications of Global Climate Change. *Environment International*, 17, 169-178, 1991.
- Swetnam, T. W., and J. L. Betancourt. Meso-Scale Disturbance and Ecological Response to Decadal Climate Variability in the American Southwest. *Journal of Climate*, 11, 3218-3247, 1998.
- Swetnam, T. W., and A. M. Lynch. Multicentury Regional-Scale Patterns of Western Spruce Budworm Outbreaks. *Ecological Monographs*, 63, 399-422, 1993.
- Torn, M. S., and J. S. Fried. Predicting the Impacts of Global Warming on Wildland Fire. *Climate Change*, 21, 257-274, 1992.
- Thomson, A. R., R. F. Sheperd, J. W. E. Harris, and R. J. Silversides. Relating Weather to Outbreaks of Western Spruce Budworm in British Columbia. *Canadian Entomologist*, 116, 375- 381, 1984.
- VEMAP Members, Vegetation/ecosystem modeling and analysis project. Comparing Biogeography and Biogeochemistry Models in a Continental-Scale Study of Terrestrial Ecosystem Responses to Climate Change and CO 2 Doubling. *Global Biogeochemical Cycles*, 4, 407-437 1995.
- Weaver, J. L., P. C. Paquet, and L. F. Ruggiero. Resilience and Conservation of Large Carnivores in the Rocky Mountains. *Conservation Biology*, 10, 964-976, 1996.
- West, N. E., and M. A. Hassan. Recovery of Sage-Brush-Grass Vegetation Following Wildfire. *Journal of Range Management* 38, 131-134, 1985.

Zobel, D. B., A. McKee, G. M. Hawk, and C. T. Dyrness. Relationships of Environment to Composition, Structure, and Diversity of Forest Communities of the Central Western Cascades of Oregon. *Ecological Monographs*, 46, 135, 1976.

Alaska – Bio.

Bjorn, L. O., T.V. Callaghan, C. Gehrke, D. Gwynne Jones, B. Holmgren, U. Johanson, and M. Sonesson. Effects of Enhanced UV-B radiation on Sub-Arctic Vegetation. *Ecology of Arctic Environments*, edited by S. J. Woodin, and M. Marquiss, Blackwell Science, Oxford, United Kingdom, pp. 241-253, 1997.

Brodeur, R. D., B. W. Frost, S. R. Hare, R. C. Francis, and W. J. Ingraham. Interannual Variations in Zooplankton Biomass in the Gulf of Alaska, and Covariation with California Current Zooplankton Biomass. *CalCOFI Report* 37, 80-89, 1996.

Callaghan, T. V., C. Korner, S. E. Lee, and J. H. C. Cornelison. Part 1: Scenarios for Ecosystem Responses to Global Change. *Global Change in Europe's Cold Regions*, edited by O. W. Heal, T. V. Callaghan, J. H. C. Cornelissen, C. Korner and S. E. Lee, pp. 11-63, European Commission Ecosystems Research Report 27, Luxembourg, 1998.

Chapin, F. S., III, G. R. Shaver, A. E. Giblin, K. J. Nadelhoffer, and J. A. Laundre. Responses of Arctic Tundra to Experimental and Observed Changes in Climate, *Ecology* 76, 3, 694-711, 1995.

Chapin, F. S., III, and A. M. Starfield. Time Lags and Novel Ecosystems in Response to Transient Climatic Change in Arctic Alaska. *Climatic Change*, 35, 449-461, 1997.

Estes, J. A., M. T. Tinker, T. M. Williams, and D. F. Doak. Killer Whale Predation on Sea Otters Linking Oceanic and Nearshore Ecosystems. *Science*, 282, 473-476, 1998.

Fay, F.H., The Role of Ice in the Ecology of Marine Mammals of the Bering Sea. *Oceanography of the Bering Sea*, edited by D. W. Hoos and E. J. Kelley, University of Alaska Institute of Marine Sciences, Occasional Publication No. 2, 1974.

Fleming, R. A., and J-N Candau. Influences of Climatic Change on Some Ecological Processes of an Insect Outbreak System in Canada's Boreal Forests and the Implications for Biodiversity. *Environmental Monitoring and Assessment*, 49, 235-249, 1997.

Fleming, R. A., and J. A. Volney. Effects of Climate Change on Insect Defoliator Population Processes in Canada's Boreal Forest: Some Plausible Scenarios. *Water, Air, and Soil Pollution*, 82, 445-454, 1995.

Francis, R. C., S. R. Hare, A. B. Hollowed, and W. S. Wooster. Effects of Interdecadal Climate Variability on the Oceanic Ecosystems of the Northeast Pacific. *Fisheries Oceanography* 7, 1-21, 1998.

Gorham, E.. The Biogeochemistry of Northern Peatlands and its Possible Responses to Global Warming. *Biotic feedback in the global climatic system: Will the warming feed the warming?*, edited by G. M. Woodwell and F. T. MacKenzie, pp. 169-187, Oxford University Press, Oxford, United Kingdom, 1995.

- Gunn, A.. Responses of Arctic Ungulates to Climatic Change. *Human Ecology and Climate Change*, edited by D. L. Peterson and D. R. Johnson, pp. 90-104, Taylor and Francis, Washington DC, 1995.
- Hall, J. V., W. E. Freyer, and B. O. Wilen. Status of Alaska Wetlands Alaska Region. *US Fish and Wildlife Service, Anchorage, Alaska*, 1994.
- Keeling, C. D., J. F. S. Chin, and T. P. Whorf. Increased Activity of Northern Vegetation Inferred from Atmospheric CO₂ Measurements. *Nature* 382(6587), 146-149, 1996.
- Lowry, L. F. and F. H. Fay. Seal Eating by Walruses in the Bering and Chukchi Seas. *Polar Biology* 3, 11-18, 1984.
- Marasco, R. J. and W. Arom. Explosive Evolution: The Changing Alaska Groundfish Fishery. *Reviews in Aquatic Sciences* 4(4), 299-315, 1991.
- Meehan, R., V. Byrd, G. Divoky, and J. Piatt. Implications of Climate Change for Alaska's Seabirds. *Proceedings of a workshop, Assessing the consequences of climate change for Alaska and the Bering Sea region, Fairbanks, 29-30 October 1998*, edited by G. Weller and P.A. Anderson, Center for Global Change and Arctic System Research, University of Alaska Fairbanks, 1999.
- Melillo, J. M., I. C. Prentice, G. D. Farquhar, E.-D Schulze, and O. E. Sala. Terrestrial Biotic Responses to Environmental Change and Feedbacks to Climate, Chapter 9. *Climate Change 1995: The Science of Climate Change, Contribution of Working Group 1 to the Second Assessment Report of the IPCC*, edited by J. T. Houghton, L. G. Meira Filho, B. A. Callander, N. Harris, A. Kattenberg, and K. Maskell, Cambridge University Press, Cambridge, United Kingdom, 1996.
- Myneni, R. B., C. D. Keeling, C. J. Tucker, G. Asrar, and R. R. Nemani. Increased Plant Growth in the Northern High Latitudes from 1981 to 1991. *Nature*, 386, 698-702, 1997.
- Neilson, R. P., I. C. Prentice, B. Smith, T. G. F. Kittel, and D. Viner. Simulated Changes in Vegetation Distribution Under Global Warming, Annex C. *The regional impacts of climate change: An assessment of vulnerability, Special Report of IPCC Working Group 2*, edited by R. T. Watson, M. C. Zinyowera, R. H. Moss, and D. J. Dokken, pp. 439-456, Cambridge University Press, Cambridge, United Kingdom, 1998.
- Oechel, W. C., A. C. Cook, S. J. Hastings, and G. L. Vourlitis. Effects of CO₂ and Climate Change on Arctic Ecosystems. *Ecology of Arctic Environments*, edited by S. J. Woodin and M. Marquiss, Blackwell Science, Oxford, United Kingdom, pp. 255-273, 1997b.
- Piatt, J. F., and P. Anderson. Response of Common Murres to the Exxon Valdez Oil Spill and Long-Term Changes in the Gulf of Alaska Marine Ecosystem. *American Fisheries Society Symposium*, 18, 720-737, 1996.
- Rupp, T. S., F. S. Chapin, III, and A. M. Starfield. Response of Sub-Arctic Vegetation to Transient Climatic Change on the Seward Peninsula in Northwest Alaska. *Global Change Biology*, 6(5), 541-555, 2000.
- Skinner, W. R., B. J. Stocks, D. L. Martell, B. Bonsal, and A. Shabbar. The Association Between Circulation Anomalies in the Mid-Troposphere and Area Burned by Wildland Fire in Canada. *Theoretical and Applied Climatology*, 63, (1-2), 89-105, 1999.

Status and Trends of the Nation's Biological Resources. *US Geological Service, Biological Resources Division, US Government Printing Office, Washington, DC, 1999.*

Stirling, I., N. J. Lunn, and J. Iacozza. Long-Term Trends in the Population Ecology of Polar Bears in Western Hudson Bay in Relation to Climate Change. *Arctic*, 52, 294-306, 1999.

Stocks, B. J., M. A. Fosberg, T. J. Lynham, L. Mearns, B. M. Wotton, Q. Yang, J-Z. Jin, K. Lawrence, G. R. Hartley, J. A. Mason, and D. W. McKenney. Climate Change and Forest Fire potential in Russian and Canadian boreal forests. *Climatic Change*, 38(1), 1-13, 1998.

The Bering Sea Ecosystem. *NRC (National Research Council), Committee on the Bering Sea Ecosystem, Polar Research Board, National Academy Press, Washington, DC, 1996.*

Viljhamsson, H.. Climatic Variations and Some Examples of Their Effects on the Marine Ecology of Icelandic and Greenland Waters, In Particular During the Present Century. *Journal of the Marine Research Institute, Reykjavik*, 15(1), 9-29, 1997.

Volney, W. J. A.. Climate change and Management of Insects Defoliators in Boreal Forest Ecosystems. *Forest Ecosystems, Forest Management, and the Global Carbon Cycle*, edited by M. J. Apps and D. T. Price, *NATO ASI Series I (Global Environmental Change)*, Vol. 40, Springer-Verlag Academic Publishers, Heidelberg, Germany, pp. 79-88, 1996.

Walsh, J. E.. Climate Change: The Arctic as a Bellwether. *Nature*, 352(6330), 19-20 (July 4), 1991.

Weller, G. A., and P. A. Anderson (Eds.). Implications of Global Change in Alaska and the Bering Sea Region. *Proceedings of a Workshop, June 3-6 1997, Center for Global Change and Arctic System Research, University of Alaska Fairbanks*, 1998.

Weller, G. A., and M. Lange (Eds.). Impacts of Global Change in the Arctic Regions. *Report from a workshop, Tromso Norway, 25-26 April, International Arctic Science Committee*, 1999.

US Affiliated Islands – Bio.

Carlquist, S.. Hawaii: A Natural History. *Published by Pacific Tropical Botanical Garden, Lawai, Kauai, Hawaii*, 1980

Coral Bleaching, Coral Mortality, and Global Climate Change. *US Department of State*, (http://www.state.gov/www/global/global_issues/coral_reefs/990305_coralreef_rpt.html)
Cited on 5/16/00

Fritts, T. H.. The Brown Tree Snake of Guam: Fact Sheet. *USGS*, 1999,
(<http://159.189.24.10/btreesnk.htm>)

Fritts, T. H., and G. H. Rodda. Invasions of the Brown Tree Snake. Our Living Resources: A Report on the Distribution, Abundance, and Health of US Plants, Animals, and Ecosystems. *Edited by E. T. LaRoe, G. S. Farris, C. E. Puckett, P. D. Doran, and M. J. Mac*, pp. 454-456, *US Department of the Interior, National Biological Service, Washington, DC*, 1995

- Glynn, P.. Coral Reef Bleaching: Facts, Hypotheses, and Implications. *Global Change Biology* 2, 495-509, 1996.
- Glynn, P. W., and W. H. de Weerd. Elimination of Two Reef-Building Hydrocorals Following the 1982-1983 El Niño Warming Event. *Science* 253(5015), 69-71, 1991.
- Harrison, C. S.. Seabirds of Hawaii: Natural History and Conservation. *Cornell University Press, Ithaca, NY*, 249 pp., 1990.
- Hawaiian Ecosystems at Risk (HEAR) Project. *US Geological Survey (USGS)*, 2000. (<http://www.hear.org/>)
- Holt, R. A.. An Alliance of Biodiversity, Health, Agriculture, and Business Interests for Improved Alien Species Management in Hawaii. *Invasive Species and Biodiversity Management*, edited by O. T. Sandlund, P. J. Schei, and A. Viken, pp. 65-78, *Kluwer Academic Publishers, The Netherlands*, 1998.
- Lobban, C. S., and M. Scheffer. Tropical Pacific Island Environments. *University of Guam Press, Mangilao, Guam, US*, 399 pp., 1997.
- Loope, L. L.. Hawaii and Pacific Islands. *Status and Trends of the Nation's Biological Resources*, edited by M. J. Mac, P. A. Opler, C. E. Puckett Haecker, and P. D. Doran, pp. 747-774, *US Geological Survey, Reston, Virginia*, 1998.
- Loope, L. L., and D. Mueller-Dombois. Characteristics of Invaded Islands. *Ecology of Biological Invasions: A Global Synthesis*, edited by H. A. Mooney, et al., *John Wiley & Sons, Chichester, United Kingdom*, pp. 257-280, 1989.
- Loope, L.L., (<http://www.hear.org/MiconiaInHawaii/MiconiaSummaryByLLL.htm>), 2000.
- Markham, A. (Ed.). Potential Impacts of Climate Change on Tropical Forest Ecosystems. *Climatic Change*, 39, 1-603, 1998.
- Meyer, J.-Y., and J. Florence. Tahiti's Native Flora Endangered by the Invasion of *Miconia Calvescens* DC. (*Melastomataceae*). *Journal of Biogeography*, 23, 775-781, 1997.
- Mueller-Dombois, D., and F. R. Fosberg. Vegetation of the Tropical Pacific Islands. *Springer-Verlag, New York*, 733 pp., 1998.
- Pounds, J.A., M. P. L. Fogden, and J. H. Campbell. Biological Response to Climate Change on a Tropical Mountain. *Nature*, 398, 611-615, 1999.
- Scatena, F. N., and M. C. Larsen. Physical Aspects of Hurricane Hugo in Puerto Rico. *Biotropica*, 23, 317-323, 1991.
- Snedaker, S. C.. Impact on Mangroves. *Climatic Change in the Inter-Americas Sea*, edited by G. A. Maul, *United Nations Environment Programme and Intergovernmental Oceanographic Commission Edward Arnold, London, United Kingdom*, pp. 282-305, 1993.

Wiley, J. W., and F. J. Vilella. Caribbean Islands. *Status and Trends of the Nation's Biological Resources*, edited by M. J. Mac, P. A. Opler, C. E. Puckett Haecker, and P. D. Doran, pp. 315-349, US Geological Survey, Reston, Virginia, 1998.

Zack, Allen, and M. C. Larsen. Puerto Rico and the US Virgin Islands: Research & Exploration. *National Geographic Society, Water Issue*, 9, 126-134, 1993.

Native Peoples and Homelands – Bio.

Arias Rojo, H., J. Bredehoeft, R. Lacewell, J. Price, J. Stromberg, and G. Thomas. Sustaining and Enhancing Riparian Migratory Bird Habitat on the Upper San Pedro River. *Expert Report prepared for the Commission for Environmental Cooperation, Montreal, Canada*, 1999.

Gibson, M. A., and S. B. Schullinger. Answers From the Ice Edge: The Consequences of Climate Change on Life in the Bering and Chukchi Seas. *Arctic Network and Greenpeace USA pamphlet*, 32 pp., June, 1998. (<http://www.globalchange.org/monitall/98apr6.htm>),

Groot, C., and T. P. Quinn. Homing Migration of Sockeye Salmon to the Fraser River. *Fisheries Bulletin*, 85, 455-469, 1987.

Huntington, H. P.. Impacts of Changes in Sea Ice and Other Environmental Parameters in the Arctic. *Proceedings of the Workshop on Impacts of Changes in Sea Ice and Other Environmental Parameters in the Arctic, Girdwood, Alaska, February 15-17, 2000, Marine Mammal Commission, Washington, DC*, in press, 2000.

LaDuke, W.. Traditional Ecological Knowledge and Environmental Futures. *Colorado Journal of International Environmental Law and Policy*, 5, 127, 1994.

McKinnell, S., H. J. Freeland, and S. D. Grouix. Assessing the Northern Diversion of Sockeye Salmon Returning to the Fraser River. *Fisheries Oceanography*, 8, 104-114, 1999.

Price, J.. Climate Change, Birds, and Ecosystems – Why Should We Care?. *Proceedings of the International Conference on Ecosystem Health, Sacramento, CA*, in press, August 1999.

Price, J.. Modeling the Potential Impacts of Climate Change on the Summer Distribution of Michigan's Nongame Birds. *Michigan Birds and Natural History* 7, 3-13, 2000.

Sorenson, L., R. Goldberg, T. L. Root, and M. G. Anderson. Potential Effects of Global Warming on Waterfowl Populations Breeding in the Northern Great Plains. *Climatic Change*, 40, 343-369, 1998.

Tynan, C. T., and D. P. Demaster. Observations and Predictions of Arctic Climate Change: Potential Effects on Marine Mammals. *Arctic*, 50, 308-322, 1997.

Research Sectors of the Report

Agriculture Sector – Bio.

Patterson D. T., J. K. Westbrook, R. J. V. Joyce, and P. D. Lindgren. Weeds, Insects, and Diseases. *Climatic Change*, 43(4), 711-727, 1999.

Water Sector – Bio.

Confronting Climate Change in California: Ecological Impacts on the Golden State. *Union of Concerned Scientists and the Ecological Society of America, UCS Publications, Cambridge, 62 pp., November 1999.*

Herrmann, R., L. Scherbarth, and R. Stottlemeyer Save the Wolves, Lose the Watersheds: Environmental Aspects of Water Use in the United States. *Journal of the American Water Resources Association, 35(6), 1999.*

Kusler, J., and V. Burkett. Climate Change in Wetlands Areas Part I: Potential Impacts and Interactions. *Acclimations, 6, 1999.* URL: (www.nacc.usgcrp.gov/newsletter/1999.06/wet.html)

Meyer, J. L., M. J. Sale, P. J. Mulholland, and N. L. Poff. Impacts of Climate Change on Aquatic Ecosystem Functioning and Health. *Journal of the American Water Resources Association, 35(6), pp. 1373-1386, 1999.*

Winter, T. C.. The Vulnerability of Wetlands to Climate Change: A Hydrologic Landscape Perspective. *Journal of the American Water Resources Association, 35(6), 1999.*

Health Sector – Bio.

Reeves, W. C., J. L. Hardy, W. K. Reisen, and M. M. Wilby. Potential Effect of Global Warming on Mosquito-Borne Arboviruses. *Journal of Medical Entomology, 31(3), 323-32, 1994.*

Reisen, W. K., H. D. Lothrop, and J. L. Hardy. Bionomics of *Culex Tarsalis* (Diptera: Culicidae) in Relation to Arbovirus Transmission in Southeastern California. *Journal of Medical Entomology 32(3), 316-27, 1995.*

Reiter, P.. Weather, Vector Biology, and Arboviral Recrudescence. *The Arboviruses: Epidemiology and Ecology, edited by T. P. Monath, CRC Press, Boca Raton, Florida, pp. 245-255, 1988.*

Valiela, I.. Marine Ecological Processes. *Springer-Verlag, New York, 1984.*

Yates, M. L., and S. R. Yates. Modeling Microbial Fate in the Subsurface Environment. *Critical Reviews of Environmental Control, 17(4), 307-44, 1988.*

Coastal Areas and Marine Resources Sector – Bio.

Boesch, B. F., M. N. Josselyn, A. J. Mehta, J. T. Morris, W. K. Nuttle, C. A. Simenstad, and D. J. P. Swift. Scientific Assessment of Coastal Wetland Loss, Restoration, and Management in Louisiana. *Journal of Coastal Research, Special Issue 20, 1994.*

Buddemeier, R. W., and S. V. Smith. Coral Adaptation and Acclimatization: A Most Ingenious Paradox. *American Zoologist, (39)1, 66-79, 1999.*

Costanza, R., et al.. The Value of the World's Ecosystem Services and Natural Capital. *Nature, 387, 253-260, 1997.*

- Gattuso, J. P., D. Allemand, and M. Frankignoulle. Photosynthesis and Calcification at Cellular, Organismal, and Community Levels in Coral Reefs: A Review on Interactions and Control by the Carbonate Chemistry. *American Zoologist*, 39(1), 160-183, 1999.
- Hoegh-Guldberg, O.. Climate Change, Coral Bleaching, and the Future of the World's Coral Reefs. *Marine and Freshwater Research*, 50(8), 839-866, 1999.
- Holt, G.. Marlin Hooked in State's 'Tropical' Waters. *Seattle Post Intelligencer*, p. C1, Friday, September 5, 1997.
- Jobling, M.. Temperature and Growth: Modulation of Growth Rate via Temperature Change. *Global Warming: Implications for Marine and Freshwater Fish*, edited by C. M. Wood and D. G. MacDonald, pp. 225-253, Cambridge University Press. 1996..
- Justic', D., N. N. Rabalais, and R. E. Turner. Effects of Climate Change on Hypoxia in Coastal Waters: A Doubled CO₂ Scenario for the Northern Gulf of Mexico. *Limnology and Oceanography*, 41, 992-1003, 1996.
- Kleypas, J. A., R. W. Buddemeier, D. Archer, J. P. Gattuso, C. Langdon, and B. N. Opdyke. Geochemical Consequences of Increased Atmospheric Carbon Dioxide on Coral Reefs. *Science*, 284(2), 118-120, 1999a.
- Lluch-Belda, D. S., H. Vasquez, D. B. Lluch-Cota, C. A. Salinas-Zavela, and R. A. Schwartzlose. The Recovery of the California Sardine as Related to Global Change. *California Cooperative Oceanic Fisheries Investigations Reports*, 33, 50-59, 1992.
- Macklin, S. A.. Report on the Fisheries Oceanography Coordinated Investigations International Workshop on Recent Conditions in the Bering Sea. *National Oceanic and Atmospheric Administration ERL. Contribution No. 2044 from NOAA/Pacific Marine Environmental Laboratory, Contribution B358 from Fisheries-Oceanography Coordinated Investigations*. 1999.
- Markham, A.. Potential Impacts of Climate Change on Ecosystems: A Review of Implications for Policymakers and Conservation Biologists. *Climate Research*, 6(2), 179-191, 1996.
- Mathews-Amos, A., and E. A. Berntson. Turning Up the Heat: How Global Warming Threatens Life in the Sea. *Marine Conservation Biology Institute*, 1999. URL: <http://www.mcbi.org/>
- McGowan, J. A., D. R. Cayan, and L. M. Dorman. Climate, Ocean Variability, and Ecosystem Response in the Northeast Pacific. *Science*, 281, 210-217, 1998.
- Mitsch, W. J., and J. G. Gosslink. Wetlands: Second Edition. *Van Nostrand Reinhold*, New York, 1993.
- Murowski, S. A.. Climate Change and Marine Fish Distributions: Forecasting from Historical Analogy. *Transactions of the American Fisheries Society*, 122, 657-658, 1993

- Rabalais, N. N., R. E. Turner, D. Justic', Q. Dortch, and W.J. Wiseman, Jr.. Characterization of Hypoxia. *NOAA Coastal Ocean Program Decision Analysis Series No. 15, National Oceanic and Atmospheric Administration, Silver Spring, Maryland, 1999.*
- Reid, W. V., and M. C. Trexler. Responding to Potential Impacts of Climate Change on US Coastal Biodiversity. *Coastal Management, 20(2), 117-142, 1992.*
- Rice, J.. Food Web Theory, Marine Food Webs, and What Climate Change May Do to Northern Marine Fish Populations. *Climate Change and Northern Fish Populations, edited by R. J. Beamish, Canadian Special Publication of Fisheries and Aquatic Sciences, 121, 1995.*
- Sagarin, R. D., J. P. Barry, S. E. Gilman, and C. H. Baxter. Climate-Related Change in an Intertidal Community Over Short and Long Time Scales. *Ecological Monographs 69(4), 465-490, 1999.*
- Veron, J. E. N.. Corals in Space and Time. *Cornell University Press, Ithaca, 1995.*
- Welch, D. W., Y. Ishida, and K. Nagasawa. Thermal Limits and Ocean Migrations of Sockeye Salmon (*Onchorhynchus nerka*): Long Term Consequences of Global Warming. *Canadian Journal of Fisheries and Aquatic Sciences, 55, 937-948, 1998.*
- Wilkinson, C., O. Linden, H. Cesar, G. Hodgson, J. Rubens, and A. E. Strong. Ecological and Socioeconomic Impacts of 1998 Coral Mortality in the Indian Ocean: An ENSO Impact and a Warning of Future Change?. *Ambio, 28(2), 188-196, 1999.*
- Wilkinson, C. R., and R. W. Buddemeier. Global Climate Change and Coral Reefs: Implications for People and Reefs. *Report of the UNEP-IOC-ASPEI-IUCN Global Task Team on the Implications of Climate Change on Coral Reefs, International Union for the Conservation of Nature. Gland, Switzerland, 1994.*
- Wong, J.. Thousands of Seals, Sea Lions Starving. *Seattle Times*, pp. A8, Thursday, December 11, 1997.

Forest Sector – Bio.

- Aber, J., W. H. McDowell, K. J. Nadelhoffer, A. Magill, G. Berntson, M. Kamakea, S. G. McNulty, W. Currie, L. Rustad, and I. Fernandez. Nitrogen Saturation in Temperate Forest Ecosystems: Hypotheses Revisited. *BioScience, 48, 921-934, 1998.*
- Abraham, K. F., and R. L. Jefferies. High Goose Populations: Causes, Impacts, and Implications. *Arctic Ecosystems in Peril: Report of the Arctic Goose Habitat Working Group, edited by B. D. J. Batt, Arctic Goose Joint Venture Special Publication, US Fish and Wildlife Service, Washington, DC, and Canadian Wildlife Service, Ottawa, Ontario, 1997.*
- Ayres, M. P., and M. J. Lombardero. Assessing the Consequences of Global Change for Forests Disturbances for Herbivores and Pathogens. *The Science of the Total Environment, 262, 263- 286, 2000.*
- Ayres, M. P., and G. A. Reams. Global Change and Disturbance in Southern Forest Ecosystems. *Global Change and Disturbance in Southern Ecosystems, edited by R. A. Mickler and S. Fox, Springer-Verlag, New York, 741-752, 1997.*

- Baron, J. S., D. S. Ojima, E. A. Holland, and W. J. Parton. Analysis of Nitrogen Saturation Potential in Rocky Mountain Tundra and Forest: Implications for Aquatic Systems. *Biogeochemistry*, 27, 61-82, 1994.
- Bartlein, P. J., C. Whitlock, and S. I. Shafer. Future Climate in the Yellowstone National Park Region and its Potential Impact on Vegetation. *Conservation Biology*, 11, 782-792, 1997.
- Bazzaz, F. A.. The Response of Natural Ecosystems To the Rising Global CO₂ Levels. *Annual Review of Ecology and Systematics*, 21, 167-196, 1990.
- Beebee, T. J. C.. Amphibian Breeding and Climate. *Nature*, 374, 219-220, 1995.
- Berntson, G. M., and F. A. Bazzaz. Regenerating Temperate Forest Mesocosms in Elevated CO₂ : Belowground Growth and Nitrogen Cycling, *Oecologia*, 113, 115-125, 1998.
- Box Score. *Fish and Wildlife Service, United States Department of Interior, Endangered Species Bulletin*, 24, 32, 1999.
- Ceulemans, R., and M. Mousseau. Effects of Elevated Atmospheric CO₂ on Woody Plants. *New Phytologist*, 127, 425-446, 1994.
- Crick, H. Q. P., C. Dudley, D. E. Glue, and D. L. Thomson. UK Birds are Laying Eggs Earlier. *Nature*, 388, 526, 1997.
- Currie, D. J.. Energy and Large Scale Patterns of Animal and Plant Species Richness. *American Naturalist*, 137, 27-39, 1991.
- Currie, D.. Tree and Vertebrate Species Richness. *Ecosystems*, in review, 2000.
- Curtis, P. S., and X. Z. Wang. A Meta-Analysis of Elevated CO₂ Effects on Woody Plant Mass, Form, and Physiology. *Oecologia*, 113, 229-313, 1998.
- Daly, C., D. Bachelet, J. M. Lenihan, R. P. Neilson, W. Parton, D. Ojima. Dynamic Simulation of Tree-Grass Interactions for Global Change Studies. *Ecological Applications*, 10(2), 449-469, 2000.
- Designing a Report on the State of the Nation's Ecosystems: Selected Measurements for Cropland, Forests, Coasts and Oceans. *The H. John Heinz III Center, Washington, DC*, 1999.
- Drake, J. A., H. A. Mooney, F. diCastri, R. H. Groves, F. J. Kruger, M. Rejmanek, M. Williamson (Eds.). Biological Invasions. A Global Perspective. *SCOPE 37, John Wiley and Sons, Chichester, United Kingdom*, 1989.
- Dukes, J. S., and H. A. Mooney. Does Global Change Increase the Success of Biological Invaders?. *TREE*, 14, 135-139, 1999.
- Egli, P., and C. Korner. Growth Responses to Elevated CO₂ and Soil Quality in Beech Spruce Model Ecosystems. *ACTA Oecologica- International Journal of Ecology*, 18, 343-349, 1997.

- Flather, C. H.. Fitting Species-Accumulation Functions and Assessing Regional Land Use Impacts on Avian Diversity. *Journal of Biogeography*, 23, 155-168, 1996.
- Flather, C. H., M. S. Knowles, and I. A. Kendall. Threatened and Endangered Species Geography: Characteristics of Hot Spots in the Conterminous United States. *BioScience*, 48, 365-376, 1998.
- Flather, C. H., S. J. Brady, and M. S. Knowles. An Analysis of Wildlife Resources in the United States: A Technical Document Supporting the 1999 RPA Assessment. *USDA Forest Service, Rocky Mountain Research Station, Fort Collins, Colorado*, 1999.
- Gilpin, M. E.. Spatial Structure and Population Vulnerability. *Viable Populations for Conservation*, edited by M. Soule, 125-140, *Cambridge University Press, Cambridge, United Kingdom*, 1987.
- Goudriaan, J., et al.. Use of Models in Global Change Studies. *Implications of Global Change for Natural and Managed Ecosystems: A Synthesis of GCTE and Related Research*, edited by B. H. Walker, W. L. Steffen, J. Canadell, and J. S. I. Ingram, *IGBP Book Series No. 4, Cambridge University Press, Cambridge, United Kingdom*, pp. 190-220, 1999.
- Hansen, A. J., and J. J. Rotella. Environmental Gradients and Biodiversity. *Managing Forests for Biodiversity*, edited by M. Hunter, *Cambridge University Press, London*, 161-209, 1999.
- Hansen, A. J., R. P. Neilson, V. H. Dale, C. Flather, L. Iverson, D. J. Currie, S. Shafer, R. L. Cook, and P. Bartlein. Global Change in Forests: Interactions Among Biodiversity, Climate, and Land Use. *BioScience*, in press, 2001.
- Hatton, T. J., G. D. Salvucci, and H. I. Wu. Eagleson's Optimality Theory of an Ecohydrological Equilibrium: Quo Vadis?. *Functional Ecology*, 11, 665-674, 1997.
- Iverson, L. R., and A. M. Prasad. Predicting Potential Future Abundance of 80 Tree Species Following Climate Change in the Eastern United States. *Ecological Monographs*, 68, 465-485, 1998.
- Iverson, L. R., A. M. Prasad, B. J. Hale, and E. K. Sutherland. An Atlas of Current and Potential Future Distributions of Common Trees of the Eastern United States. *General Technical Report, USDA Forest Service, Northeastern Forest Experiment Station, Radnor, Pennsylvania*, 1999.
- Iverson, L. R., and A. M. Prasad. Potential Changes in Tree Species Richness and Forest Community Types Following Climate Change. *Ecosystems*, in review, 2000.
- Keane, R. E., K. C. Ryan, and M. A. Finney. Simulating the Consequences of Fire and Climate Regimes on a Complex Landscape in Glacier National Park, Montana. *Fire in Ecosystem Management: Shifting the Paradigm from Suppression to Prescription*, edited by T. L. Pruden and L. A. Brennan, *Tall Timbers Fire Ecology Conference Proceedings, No. 20, Tall Timbers Research Station, Tallahassee, Florida*, 1998.
- Kerstiens, G.. Shade Tolerance as a Predictor of Responses to Elevated CO₂ in Trees. *Physiologia Plantarum*, 102, 472-480, 1998.

- Kozlowski, T. T., and S. G. Pallardy. Growth Control in Woody Plants. *Academic Press, San Diego, California*, 1997.
- Lambers, H., F. S. Chapin, III, and T. L. Pons. Plant Physiological Ecology. *Springer-Verlag, New York*, 1998.
- Lenihan, J. M., C. Daly, D. Bachelet, and R. P. Neilson. Simulating Broad-Scale Fire Severity in a Dynamic Global Vegetation Model. *Northwest Science*, 72, 91-103, 1997.
- Long, S. P., C. P. Osborne, and S. W. Humphries. Photosynthesis, Rising Atmospheric Carbon Dioxide Concentration and Climate Change. *Global Change: Effects on Coniferous Forests and Grasslands*, edited by A. I. Breymeyer, D. O. Hall, J. M. Melillo, and G. I. Agren, pp. 121-159, John Wiley and Sons, Ltd, New York, 1996.
- Lovett, G. M.. Atmospheric Deposition of Nutrients and Pollutants in North America: An Ecological Perspective. *Ecological Applications*, 4, 629-650, 1994.
- Lugo, A. E., and F. N. Scatena. Ecosystem-Level Properties of the Luquillo Experimental Forest, With Emphasis of the Tabonuco Forest. *Tropical Forests: Management and Ecology*, edited by A. E. Lugo and C. Lowe, Springer-Verlag, New York, 1995.
- Lugo, A. E., and F. N. Scatena. Background and Catastrophic Tree Mortality in Tropical Moist, Wet, and Rain Forests. *Biotropica*, 28, 585-599, 1996.
- Mack, M. C., and C. M. D'Antonio. Impacts of Biological Invasions on Disturbance Regimes. *TREE* 13, 195-198, 1998.
- Magill, A. H., J. D. Aber, J. J. Hendricks, R. D. Bowden, J. M. Melillo, and P. Steudler. Biogeochemical Response of Forest Ecosystems to Simulated Chronic Nitrogen Deposition. *Ecological Applications*, 7, 402-415, 1997.
- Magill, A., J. Aber, G. Berntson, W. McDowell, K. Nadelhoffer, J. Melillo, and P. Steudler. Long-Term Nitrogen Additions and Nitrogen Saturation in Two Temperate Forests, *Ecosystems*, 3, 2000.
- McGuire, A. D., J. M. Melillo, L. A. Joyce, D. W. Kicklighter, A. L. Grace, B. Moore, and C. J. Vorosmarty. Interactions Between Carbon and Nitrogen Dynamics in Estimating Net Primary Productivity for Potential Vegetation in North America. *Global Biogeochemical Cycles*, 6, 101- 124, 1992.
- Mohren, G. M. J., K. Kramer, and S. Sabate. Impacts of Global Change on Tree Physiology and Forest Ecosystems. *Kluwer Academic Publishers, Boston, Massachusetts*, 1996.
- Mooney, H. A., J. Canadell, F. S. Chapin, J. Ehleringer, C. Korner, R. McMurtrie, W. J. Parton, L. F. Pitelka, and E. D. Schulze. Ecosystem Physiology Responses to Global Change. *Implications of Global Change for Natural and Managed Ecosystems: A Synthesis of GCTE and Related Research*, edited by H. B. Walker, W. L. Steffen, J. Canadell, and J. S. I. Ingram, IGBP Book Series No. 4, pp. 141-189, Cambridge University Press, 1999.

- Morison, J. I. L., and D. W. Lawlor. Interactions Between Increasing CO₂ Concentration and Temperature on Plant Growth. *Plant, Cell, and Environment*, 22, 659-682, 1999.
- Negron, J. F.. Probability of Infestation and Extent of Mortality Associated with the Douglas-Fir Beetle in the Colorado Front Range. *Forest Ecology & Management*, 107, 71-85, 1998.
- Neilson, R. P.. A Model for Predicting Continental-Scale Vegetation Distribution and Water Balance. *Ecological Applications* 5, 362-385, 1995.
- Neilson, R. P., I. C. Prentice, B. Smith, T. Kittel, and D. Viner. Simulated Changes in Vegetation Distribution Under Global Warming. *Appendix C. The Regional Impacts of Climate Change: An Assessment of Vulnerability. Intergovernmental Panel on Climate Change*, edited by R. T. Watson, M. C. Zinyowera, and R. H. Moss, Cambridge University Press, New York, 1998.
- Neilson, R. P., and R. J. Drapek. Potentially Complex Biosphere Responses to Transient Global Warming. *Global Change Biology*, 4, 505-521, 1998.
- Noss, R. F., E. T. LaRoe, and J. M. Scott. Endangered Ecosystems of the United States: A Preliminary Assessment of Loss and Degradation. *US Fish And Wildlife Service Report*, Washington, DC, 1994.
- O'Neill, R.V., K. H. Riitters, J. D. Wickham, and K. Bruce Jones. Landscape Patterns and Regional Assessment. *Ecosystem Health*, 5, 225-233, 1999.
- Peters, R. L.. Conservation of Biological Diversity in the Face of Climate Change, *Global Warming and Biological Diversity*, edited by R. L. Peters and T. E. Lovejoy, Yale University Press, New Haven, Connecticut, 15-30, 1992.
- Price, C., and D. Rind. The Impact of a 2xCO₂ Climate on Lightning-Caused fires. *Journal of Climate*, 7, 1484-1494, 1994.
- Pritchard, S. G., C. Mosjidis, C. M. Peterson, G. B. Runion, and H. H. Rogers. Anatomical and Morphological Alterations in Longleaf Pine Needles Resulting From Growth in Elevated CO₂ : Interactions with Soil Resource Availability. *International Journal of Plant Sciences*, 159, 1002- 1009, 1998.
- Pulliam, H. R.. Sources, Sinks, and Population Regulation. *American Naturalist*, 132, 652-661, 1988.
- Rey, A., and P. G. Jarvis. Long-Term Photosynthetic Acclimation to Increased Atmospheric CO₂ Concentration in Young Birch (*Betula Pendula*) Trees. *Tree Physiology*, 18, 441-450, 1998.
- Routt National Forest, Draft Environmental Impact Statement South Fork Salvage Analysis. *USDA Forest Service, Routt National Forest, Hahns Peak/Bears Ears Ranger District, Steamboat Springs, Colorado, Routt County, Colorado*, 159 pp., 1998.
- RPA Assessment of the Forest and Rangeland Situation in the United States. *Forest Resource Report No. 27, USDA Forest Service, Washington, DC*, 1994.

- Shafer, S. L., P. J. Bartlein, and R. S. Thompson. Potential Changes in the Distributions of Western North America Tree and Shrub Taxa Under Future Climate Scenarios. *Ecosystems*, in review, 2000.
- Shugart, H. H.. A Theory of Forest Dynamics: The Ecological Implications of Forest Succession Models. *Springer-Verlag, New York*, 1984.
- Simberloff, D.. The Biology of Invasions. *Strangers in Paradise: Impact and Management of Nonindigenous Species in Florida*, edited by D. Simberloff, D. Schmitz, and T. Brown, pp. 3-17, *Island Press, Washington, DC*, 1997.
- Simberloff, D.. Global Climate Change and Introduced Species in Forests. *The Science of the Total Environment*, 262, 253-262, 2000.
- Stitt, M., and A. Krapp. The Interaction Between Elevated Carbon Dioxide and Nitrogen Nutrition: The Physiological and Molecular Background. *Plant, Cell, and Environment*, 22, 583-621, 1999.
- Taylor, Jr., G. E., D. W. Johnson, and C. P. Andersen. Air Pollution and Forest Ecosystems: A Regional to Global Perspective. *Ecological Applications*, 4, 662-689, 1994.
- Tjoelker, M. J., J. Oleksyn, and P. B. Reich. Seedlings of Five Boreal Tree Species Differ in Acclimation of Net Photosynthesis to Elevated CO₂ and Temperature. *Tree Physiology*, 18, 715- 726, 1998a.
- Tjoelker, M. J., J. Oleksyn, and P. B. Reich. Temperature and Ontogeny Mediate Growth Response to Elevated CO₂ in Seedlings of Five Boreal Tree Species. *New Phytologist*, 140, 197- 210, 1998b.
- Torn, M. S., and J. S. Fried. Predicting the Impact of Global Warming on Wildfire. *Climatic Change*, 21, 257-274, 1992.
- Ungerer, M. J., M. P. Ayres, and M. J. Lombardero. Climate and the Northern Distribution Limited of *Dendroctonus Frontalis* Zimmerman (Coleoptera: Scolytidae). *Journal of Biogeography* 26, 113-1145, 1999.
- VEMAP members. Vegetation/Ecosystem Modeling and Analysis Project: Comparing Biogeography and Biogeochemistry Models in a Continental-Scale Study of Terrestrial Ecosystem Responses to Climate Change and CO₂ Doubling. *Global Biogeochemical Cycles*, 9, 407-437, 1995.
- Vitousek, P. M., C. M. D'Antonio, L. L. Loope, and R. Westbrooks. Biological Invasions as Global Environmental Change. *American Scientist*, 84, 468-478, 1996.
- Walker, B. H., W. L. Steffen, and J. Langridge. Interactive and Integrated Effects of Global Change on Terrestrial Ecosystems. *The Terrestrial Biosphere and Global Change*, edited by B. Walker, W. Steffen, J. Canadell, and J. Ingram, *Cambridge University Press*, 1999.
- Walters, C. Challenges in Adaptive Management of Riparian and Coastal Ecosystems. *Conservation Ecology*, 1(2), 1997.

- Wilcove, D. S., D. Rothstein, J. Dubow, A. Phillips, and E. Losos. Quantifying Threats to Imperiled Species in the United States. *BioScience*, 48, 607-615, 1998.
- Will, R. E., and R. O. Teskey. Effect of Elevated Carbon Dioxide Concentration and Root Restriction on Net Photosynthesis, Water Relations, and Foliar Carbohydrate Status of Loblolly Pine Seedlings. *Tree Physiology*, 17, 655-661, 1997a.
- Will, R. E., and R. O. Teskey. Effect of Irradiance and Vapor-Pressure Deficit on Stomatal Response to CO₂ Enrichment of Four Tree Species. *Journal of Experimental Botany*, 48, 2095-2102, 1997b.
- Williams, M. W., J. S. Baron, N. Caine, R. Sommerfeld, and J. R. R. Sanford. Nitrogen Saturation in the Rocky Mountains. *Environmental Science and Technology*, 30, 640-646, 1996.
- Williamson, M.. Invasions. *Ecography*, 22, 5-12, 1999.

Carbon

Scenarios Used for the Report

Scenarios for Climate Variability and Change – Carb.

- Andres, R. J., G. Marland, T. Boden, and S. Bischoff. Carbon Dioxide Emissions from Fossil Fuel Combustion and Cement Manufacture, 1751 to 1991, and an Estimate for Their Isotopic Composition and Latitudinal Distribution. *The Carbon Cycle*, edited by T. M. L. Wigley and D. Schimel, Cambridge University Press, Cambridge, United Kingdom, 312 pp. 2000.
- Conway, T. J., P. P. Tans, and L. S. Waterman. Atmospheric CO₂ Records From sites in the NOAA/CMDL Air Sampling Network. *Trends '93: A Compendium of Data on Global Change*, edited by T. A. Boden, et al., ORNL/CDIAC-65, Carbon Dioxide Information Analysis Center, Oak Ridge National Laboratory, US Department of Energy, Oak Ridge Tennessee. 1994.
- Houghton, R. A., and J. L. Hackler. Continental Scale Estimates of the Biotic Carbon Flux from Land Cover Change, 1850-1980. *ORNL/CDIAC-79, NDP-050*, Oak Ridge National Laboratory, 144 pp. 1995.
- Houghton, R. A.. Land-Use Change and the Carbon-Cycle, *Global Change Biology*, 1, 275-287. 1995.
- IPCC (Intergovernmental Panel on Climate Change). Special Report on Emissions Scenarios, N. Nakicenovic (lead author). *Cambridge University Press, Cambridge, United Kingdom*, 599 pp. 2000.

- Keeling, C. D., and T. P. Whorf. Atmospheric CO₂ Records from Sites in the SIO Air Sampling Network. *Trends: A Compendium of Data on Global Change, Carbon Dioxide Information Analysis Center, Oak Ridge National Laboratory, US Department of Energy, Oak Ridge, Tennessee, 1999.*
- Marland, G., T. A. Boden, R. J. Andres, A. L. Brenkert, and C. Johnston. Global, Regional, and National CO₂ Emissions. *Trends: A Compendium of Data on Global Change, Carbon Energy, Oak Ridge, Tennessee. 1999.*
- PSAC (President's Science Advisory Council). Atmospheric Carbon Dioxide. Appendix Y4, *Restoring the Quality of Our Environment, Report of the Environmental Pollution Panel, The White House, Washington, DC. 1965.*
- Shackleton, N. J., J. Le, A. C. Mix, and M. Hall. Carbon Isotope Records from Pacific Surface Waters and Atmospheric Carbon Dioxide. *Quaternary Science Reviews, 11, 387-400. 1992.*
- Schimel, D, I. G. Enting, M. Heimann, T. M. L. Wigley, D. Raynaud, D. Alves, and U. Siegenthaler. CO₂ and the Carbon Cycle. *Climate Change 1994, Radiative Forcing of Climate Change and an Evaluation of the IPCC 1992 Emission Scenarios, edited by J. T. Houghton, et al., Cambridge University Press, Cambridge, United Kingdom. 1995.*
- Wigley, T.M.L., and D. Schimel (Eds.). The Carbon Cycle. *Cambridge University Press, Cambridge United Kingdom, 312 pp, 2000.*

Vegetation and Biogeochemical Scenarios – Carb.

- Hunt, E. R., Jr, F. C. Martin, and S. W. Running. Simulating the Effect of Climatic Variation on Stem Carbon Accumulation of a Ponderosa Pine Stand: Comparison with Annual Growth Increment Data. *Tree Physiology, 9, 161-172. 1991.*
- Kicklighter, D. W., et al.. A First-Order Analysis of the Potential Role of CO₂ Fertilization to Affect the Global Carbon Budget: A Comparison Study of Four Terrestrial Biosphere Models. *Tellus 51B, 343-366. 1999.*
- Korol, R. L., S. W. Running, K. S. Milner, and E. R. Hunt, Jr.. Testing a Mechanistic Carbon Balance Model Against Observed Tree Growth. *Canadian Journal of Forest Research, 21, 1098- 1105. 1991.*
- McGuire, A. D., J. M. Melillo, D. W. Kicklighter, Y. Pan, X. Xiao, J. Helfrich, B. Moore, III, C. J. Vorosmarty, and A. L. Schloss. Equilibrium Responses of Global Net Primary Production and Carbon Storage to Doubled Atmospheric Carbon Dioxide: Sensitivity to Changes in Vegetation Nitrogen Concentration. *Global Biogeochemical Cycles, 11, 173-189. 1997.*
- McGuire A. D., J. S. Clein, J. M. Melillo, D. W. Kicklighter, R. A. Meier, C. J. Vorosmarty, and M. C. Serreze. Modeling Carbon Responses of Tundra Ecosystems to Historical and Projected Climate: Sensitivity of Pan-Arctic Carbon Storage to Temporal and Spatial Variation in Climate, *Global Change Biology, in press. 2000.*

- Sitch, S., The Role of Vegetation Dynamics in the Control of Atmospheric CO₂ Content. *doctoral dissertation, Department of Ecology, Plant Ecology, Lund University, Lund, Sweden, 2000.*
- Tian, H., J. M. Melillo, D. W. Kicklighter, A. D. McGuire, J. V. K. Helfrich, III, B. Moore, III, and C. J. Vörösmarty. Effect of Interannual Climate Variability on Carbon Storage in Amazonian Ecosystems. *Nature*, 396, 664-667. 1998.
- Tian, H., J. M. Melillo, D. W. Kicklighter, A. D. McGuire, and J. Helfrich. The Sensitivity of Terrestrial Carbon Storage to Historical Climate Variability and Atmospheric CO₂ in the United States, *Tellus* 51B, 414-452. 1999.
- Tian, H., J. M. Melillo, D. W. Kicklighter, A. D. McGuire, B. Moore, III, and C. J. Vorosmarty. Climatic and Biotic Controls on Interannual Variations of Carbon Storage in Undisturbed Ecosystems of the Amazon Basin. *Global Ecology and Biogeography*, *in press*. 2000.
- Schimel, D., et al.. Contribution of Increasing CO₂ and Climate to Carbon Storage by Ecosystems in the United States. *Science*, 287, 2004-2006. 2000.

Socioeconomic Context for Climate Impact Assessment – Carb.

- Nakicenovic, N., and R. Stewart (Eds.). Emissions Scenarios: Special Report of the Intergovernmental Panel on Climate Change. *Cambridge University Press, New York*. 2000.

Report's Regional Elements of the U.S.

Southeast Region – Carb

- Justic', D., N. N. Rabalais, and R. E. Turner, Impacts of Climate Change on Net Productivity of Coastal Waters: Implications for Carbon Budget and Hypoxia, *Climate Research* 8, 225-237, 1997.

Midwest Region – Carb.

- Lal, R., J. M. Kimble, R. F. Follett, and C. V. Cole. The Potential of US Cropland to Sequester Carbon and Mitigate the Greenhouse Effect. *Sleeping Bear Press. Ann Arbor, Michigan*. 1998.

Great Plains Region – Carb.

- Haas, H. J., C. E. Evans, and E. F. Miles. Nitrogen and Carbon Changes in Great Plains Soils Influenced by Cropping and Soil Treatments. *USDA Technical Bulletin 1164*. 1957.
- Lal, R., J. M. Kimble, R. F. Follett, and C. V. Cole. The Potential of US Cropland to Sequester Carbon and Mitigate the Greenhouse Effect. *Sleeping Bear Press, Chelsea, Michigan*. 1998.

Tiessen, H., L.W.B. Stewart, and J.R. Bettany. Cultivation Effects on the Concentration and Amounts of Carbon, Nitrogen, and Phosphorus in Grassland Soils. *Agronomy Journal*, 74, 831- 835. 1982.

Pacific Northwest Region – Carb.

Bachelet, D., R. P. Neilson, J. M. Lenihan, and R. J. Drapek. Climate Change Effects on Vegetation Distribution and Carbon Budget in the US. *Ecosystems*, in review, 2000.

Bazzaz, F. A., S. L. Bassow, G. M. Berntson, and S. C. Thomas. Elevated CO₂ and Terrestrial Vegetation: Implications For and Beyond the Global Carbon Budget. *Global Change and Terrestrial Ecosystems*, edited by B. Walker and W. Steffen, pp. 43-76, Cambridge University Press, New York, NY, 1996.

Ellsworth, D. S.. CO₂ Enrichment in a Maturing Pine Forest: Are CO₂ Exchange and Water Status in the Canopy Affected?, *Plant, Cell, and Environment* (22), 461-472, 1999.

Harmon, M. E., W. K. Ferrell, and J. F. Franklin. Effects on Carbon Storage of Converting Old-Growth Forests to Young Forests. *Science*, 247, 699-702, 1990.

Sohngen, B., R. Mendelsohn, and R. Neilson. Predicting CO₂ Emissions from Forests During Climatic Change: A Comparison of Natural and Human Response Models. *Ambio*, 27, 509-513, 1988.

Alaska – Carb.

Bockheim, J. G., L. R. Everett, K. M. Hinkel, F. E. Nelson, and J. Brown. Soil Organic Carbon Storage and Distribution in Arctic Tundra, Barrow, Alaska. *Soil Science Society of America Journal*, 63(4), 934-940, 1999.

Ciais, P., P. P. Tans, M. Troler, J. W. C. White, and R. R. J. Francey. A Large Northern Hemisphere Terrestrial CO₂ Sink Indicated by the C¹³/C¹² Ratio for Atmospheric CO₂. *Science*, 269, 1098-1102, 1995.

Goulden, M. L., et al.. Sensitivity of Boreal Forest Carbon Balance to Soil Thaw. *Science*, 279, 214-217, 1998.

Kasischke, E. S., and B. J. Stocks (Eds.). Fire, Climate Change, and Carbon Cycling in the Boreal Forest. *Ecological Studies Series*, Springer-Verlag, New York, 2000.

Keyser, A. R., J. S. Kimball, R. R. Nemani, and S. W. Running. Simulating the Effects of Climate Change on the Carbon Balance of North American High Latitude Forests. *Global Change Biology*, 6, 1-11, 2000.

Lindroth, A., A. Grelle, and A-S. Moren. Long-Term Measurements of Boreal Forest Carbon Balance Reveal Large Temperature Sensitivity. *Global Change Biology*, 4(4), 443-450, 1998.

McGuire, A. D., and J. E. Hobbie. Global Climate Change and the Equilibrium Responses of Carbon Storage in Arctic and subArctic Regions. *Modeling the Arctic system: A workshop report on the state of modeling in the Arctic System Science Program*, pp. 53-54, The Arctic Research Consortium of the United States, Fairbanks Alaska, 1997.

- McGuire, A. D., J. M. Melillo, D. W. Kicklighter, and L. A. Joyce. Equilibrium Responses of Soil Carbon to Climate Change: Empirical and Process-Based Estimates. *Journal of Biogeography*, 22, 785-796, 1995.
- McKane, R. B., E. B. Rasetter, G. R. Shaver, K. J. Nadelhoffer, A. E. Giblin, J. A. Laundre, and F. S. Chapin, III. Climate Effects of Tundra Carbon Inferred from Experimental Data and a Model. *Ecology*, 78, 1170-1187, 1997a.
- McKane, R. B., E. B. Rasetter, G. R. Shaver, K. J. Nadelhoffer, A. E. Giblin, J. A. Laundre, and F. S. Chapin, III. Reconstruction and Analysis of Historical Changes in Carbon Storage in Arctic Tundra. *Ecology* 78, 1188-1198, 1997b.
- Melillo, J. M., D. W. Kicklighter, A. D. McGuire, W. T. Peterjohn, K. M. Newkirk. Global Change and its Effect on Soil Organic Carbon Stocks. *Role of nonliving organic matter in the Earth's carbon cycle*, edited by R. G. Zepp and C. H. Sontaff, pp. 175-189, John Wiley and Sons: New York, 1995.
- Moore T. R., N. T. Roulet, J. M. Waddington. Uncertainty in Predicting the Effect of Climatic Change on the Carbon Cycling of Canadian Peatlands. *Climatic Change*, 40(2), 229-245, 1998.
- Oechel, W. C., S. J. Hastings, G. Vourlitis, M. Jenkins, G. Richers, and N. Gruike. Recent Change of Arctic Tundra Ecosystems From a Net Carbon Dioxide Sink to a Source. *Nature*, 361, 520-523, 1993.
- Oechel, W. C., G. L. Vourlitis, S. J. Hastings, and S. A. Bochkarev. Change in Arctic CO₂ Flux Over Two Decades: Effects of Climate Change at Barrow, Alaska. *Ecological Application*, 5(3), 846-855, 1995.
- Oechel W. C., G. L. Vourlitis, and S. J. Hastings. Cold season CO₂ Emission From Arctic Soil. *Global Biogeochemical Cycles*, 11, 163-172, 1997a.
- Post, W. M., W. R. Emanuel, P. J. Zinke, and A. G. Stangenberger. Soil Carbon Pools and World Life Zones. *Nature*, 298, 156159, 1982.
- Rivkin, F. M.. Release of Methane from Permafrost as a Result of Global Warming and Other Disturbances. *Polar Geography*, 22, 105-118, 1998.
- Robinson, S. D., and T. R. Moore. Carbon and Peat Accumulation Over the Past 1200 Years in a Landscape with Discontinuous Permafrost, Northwestern Canada. *Global Biogeochemical Cycles*, 13, 591-601, 1999.
- Stocker, T. F., and A. Schmittner. Influence of CO₂ Emission Rates on the Stability of the Thermohaline Circulation. *Nature*, 388, 862-865, 1997.
- Vourlitis, G. L., and W. C. Oechel. Eddy Covariance Measurements of CO₂ and Energy Fluxes of an Alaskan Tussock Tundra Ecosystem. *Ecology*, 80(2), 686-701, 1999.

Research Sectors of the Report

Coastal Areas and Marine Resources Sector – Carb.

Sarmiento, J. L., and C. Le Quere. Oceanic Carbon Dioxide Uptake in a Model of Century-Scale Global Warming. *Science*, 274, 1346-1350, 1996.

Forest Sector – Carb.

Bachelet, D., R. P. Neilson, J. M. Lenihan, and R. J. Drapek. Climate Change Effects on Vegetation Distribution and Carbon Budget in the US. *Ecosystems*, in review, 2000.

Birdsey, R. A., and L. S. Heath. Carbon Changes in US forests. *Productivity of America's Forests and Climate Change, General Technical Report RM-GTR-271*, edited by L. A. Joyce, Rocky Mountain Forest and Range Experiment Station, Fort Collins, Colorado, 1995.

Birdsey, R. A., R. Alig, and D. Adams. Mitigation Activities in the Forest Sector to Reduce Emissions and Enhance Sinks of Greenhouse Gases. *The Impact of Climate Change on America's Forests, General Technical Report RMRS-GTR*, edited by L. A. Joyce and R. A. Birdsey, Rocky Mountain Research Station, Fort Collins, Colorado, 2000.

Ellsworth, D. S.. CO₂ Enrichment in a Maturing Pine Forest: Are CO₂ Exchange and Water Status in the Canopy Affected?. *Plant, Cell, and Environment*, 22, 461-472, 1999.

Houghton, R. A., J. L. Hackler, and K. T. Lawrence. The US Carbon Budget: Contributions for Land-Use Change. *Science*, 285, 574-578, 1999.

Shaver, G. R., W. D. Billings, F. S. Chapin, III, A. E. Giblin, K. J. Nadelhoffer, W. C. Oechel, and E. B. Rastetter. Global Change and the Carbon Balance of Arctic Ecosystems, *BioScience*, 42, 433-441, 1992.

Solomon, A. M., I. C. Prentice, R. Leemans, and W. P. Cramer. The Interactions of Climate and Land Use in Future Terrestrial Carbon Storage and Release. *Water, Air, and Soil Pollution* 70, 595-614, 1993.

Schimel, D. J., et al.. Contribution of Increasing CO₂ and Climate to Carbon Storage by Ecosystems in the United States. *Science*, 287, 2004-2006, 2000.

Cryosphere

Scenarios Used for the Report

Scenarios for Climate Variability and Change – Cryo.

Judson, A., and N. Doesken. Density of Freshly Fallen Snow in the Central Rocky Mountains. *Bulletin of the American Meteorological Society*, 81, 1577-1587. 2000.

Rothrock, D. A., Y. Yu, and G. A. Maykut. Thinning of the Arctic Sea-Ice Cover. *Geophysical Research Letters*, 26(23), 3469-3472. 1999.

Study's Regional Elements of the U.S.

Northeast Region – Cryo.

Karl, T. R., P. Ya. Groisman, R. W. Knight, and R. R. Heim, Jr.. Recent Variations of Snow Cover and Snowfall in North America and their Relation to Precipitation and Temperature Variations, *Journal of Climate*, 6, 1327-1344. 1993.

Midwest Region – Cryo.

Fang, X., and H. G. Stefan. Potential Climate Warming Effects on Ice Covers of Small Lakes in the Contiguous US. *Cold Regions Science and Technology*, 27, 119-140. 1998.

Kunkel, K. E., N. Westcott, and D. Kristovich. Assessment of Potential Effects of Climate Change on Heavy Lake-Effect Snowstorms Near Lake Erie. *Preprints, 11th Symposium on Global Change Studies, Long Beach, California, January 10-13, 2000, American Meteorological Society, Boston, Massachusetts, pp. 50-53. 2000.*

West Region – Cryo.

McCabe, G. J., and D. M. Wolock. General-Circulation-Model Simulations of Future Snowpack in the Western United States, *Journal of the American Water Resources Association*, 35(6), 1473-1484. 1999.

Alaska – Cryo.

Beltaos, S., and T. D. Prowse. Climate Impacts on Extreme Ice Jam Events in Canadian Rivers. *Hydrological Sciences Journal*, in press, 2000.

Anisimov, O. A., N. I. Shiklomanov, and F. E. Nelson. Global Warming and Active-Layer Thickness: Results from Transient General Circulation Models. *Global and Planetary Change*, 15(3-4), pp. 61-77, 1997.

Anisimov, O. A., and F. E. Nelson. Permafrost Zonation and Climate Change in the Northern Hemisphere: Results from Transient General Circulation Models. *Climatic Change*, 35(2), 241- 258, 1997 .

Brown, J., O. J. Ferrians, Jr., J. A. Heginbottom, and E. S. Melnikov. Circum-Arctic Map of Permafrost and Ground Ice Conditions. *International Permafrost Association, published as Map CP45, US Geological Survey, Washington, DC, 1997.*

Cavalieri, D. J., P. Gloersen, C. L. Parkinson, J. C. Comiso, and H. J. Zwally. Observed Hemispheric Asymmetry in Global Sea Ice Changes. *Science*, 278, 1104-1106, 1997.

Chapman, W. L., and J. E. Walsh. Recent Variations of Sea Ice and Air Temperature in High Latitudes. *Bulletin of the American Meteorological Society*, 74, 1, 33-47, 1993.

- Dowdeswell, J., J. O. Hagen, H. Bjornsson, A. Glazovsky, P. Holmlund, J. Jania, E. Josberger, R. Koerner, S. Ommanney, and B. Thomas. The Mass Balance of Circum-Arctic Glaciers and Recent Climate Change. *Quaternary Research*, 48, 1-14, 1997.
- Dyke, L. D., J. M. Aylsworth, M. M. Burges, F. M. Nixon, and F. Wright. Permafrost in the Mackenzie Basin, Its Influence on Land-Altering Processes, and Its Relationship to Climate Change. *Mackenzie Basin Impact Study Final Report*, edited by S. J. Cohen, Atmospheric Environment Service, Environment Canada, Downsview, Ontario, 1997.
- Echelmeyer K. A, W. D. Harrison, C. F. Larsen, J. Sapiano, J. E. Mitchell, J. DeMallie, B. Rabus, G. Adalgeirsdottir, and L. Sombardier. Airborne Surface Profiling of Glaciers: A Case-Study in Alaska. *Journal of Glaciology* 42(142), 538-547. 1996.
- Everett, J. T., and B. B. Fitzharris. The Arctic and the Antarctic, Chapter 3. *The regional impacts of climate change: An assessment of vulnerability*, edited by R. T. Watson, M. C. Zinyowera, and R. H. Moss, Special report of IPCC Working Group 2, Cambridge University Press, Cambridge, United Kingdom, 1998.
- Ferrians, O. J.. Permafrost Map of Alaska. *US Geological Survey Miscellaneous Geologic Investigations Map I-445*, 1:2,500,000, 1965.
- French, H. M., and I. E. Egorov. 20th Century Variations in the Southern Limit of Permafrost Near Thompson, Northern Manitoba, Canada. *Proceedings of the Seventh International Conference on Permafrost*, edited by A. G. Lewkowica and M. Allard, Centre d'Études Nordiques, Université Laval, Quebec, pp. 297-304, 1998.
- Johannessen, O. M., M. Miles, and E. Bjorgo. The Arctic's Shrinking Sea Ice. *Nature*, 376, 126-127, 1995.
- Johannessen, O. M., E. V. Shalina, and M. W. Miles. Satellite Evidence for an Arctic Sea Ice Cover in Transformation. *Science*, (286)5446, 1937-1939, 1999.
- Jorgenson, M. T., C. H. Racine, J. C. Walters, and T. E. Osterkamp. Widespread and Rapid Permafrost Degradation and Associated Ecological Changes Caused by a Warming Climate on the Tanana Flats, Central Alaska. *Climatic Change*, in press, 2000.
- Krabil, W., E. Frederick, S. Manizade, C. Martin, J. Sonntag, R. Swift, R. Thomas, W. Wright, and J. Yungel. Rapid Thinning of Parts of the Southern Greenland Ice Sheet, *Science*, 283, 1522-524, 1999.
- Kwong, Y. T. J., and T. Y. Gan. Northward Migration of Permafrost Along the Mackenzie Highway and Climatic Warming. *Climatic Change* 26, 399-419, 1994.
- Maslanik, J. A., M. C. Serreze, and R.G. Barry. Recent Decreases in Arctic Summer Ice Cover and Linkages to Atmospheric Circulation Anomalies. *Geophysical Research Letters*, 23(13), 1677-1680, 1996.
- Maslanik, J. A., M. C. Serreze, and T. Agnew. On the Record Reduction in 1998 Western Arctic Sea-Ice Cover. *Geophysical Research Letters*, 26(13), 1905-1908, 1999.

- McPhee, M. G., T. P. Stanton, J. H. Morison, and D. G. Martinson. Freshening of the Upper Ocean in the Arctic: Is Perennial Sea Ice Disappearing?. *Geophysical Research Letters*, 25(10), 1729-1732, 1998.
- Meier, M. F.. Ice, Climate, and Sea Level: Do We Know What is Happening?. *Ice in the Climate System, NATO ASI Series, Vol. 112, edited by W. R. Peltier, Springer-Verlag, Berlin*, pp. 141-160, 1993.
- Osterkamp, T. E.. Evidence for Warming and Thawing of Discontinuous Permafrost in Alaska. *Elsevier Oceanography Series*, 75(44), 85, 1994.
- Osterkamp, T. E., D. C. Esch, and V. E. Romanovsky. Permafrost, Chapter 10. *Implications of global change in Alaska and the Bering Sea region, Proceedings of a workshop, June 3-6 1997, edited by G. A. Weller and P. A. Anderson, Center for Global Change and Arctic System Research, University of Alaska Fairbanks*, 1998.
- Osterkamp, T. E., J. K. Peterson, and T. S. Collett. Permafrost Thicknesses in the Oliktok Point, Prudhoe Bay, and Mikkelsen Bay Areas of Alaska. *Cold Regions Science and Engineering*, 11, 99-105, 1985.
- Osterkamp, T. E. and V. E. Romanovsky. Evidence for Warming and Thawing of Discontinuous Permafrost in Alaska. *Permafrost and Periglacial Processes*, 10, 17-37 (January-March), 1999.
- Rothrock, D. A., Y. Yu and G. A. Maykut. Thinning of the Arctic Sea Ice Cover. *Geophysical Research Letters*, 26(23), 3469-3472 (December 1), 1999.
- Sapiano, J.J., W. D. Harrison, and K. A. Echelmeyer. Elevation, Volume, and Terminus Changes of Nine Glaciers in North America. *Journal of Glaciology* 44(146), 119-135, 1998.
- Serreze, M.C., J. A. Maslanik, J. R. Key, R. F. Kokaly, and D. A. Robinson. Diagnosis of the Record Minimum in Arctic Sea-ice Area During 1990 and Associated Snow Cover Extremes. *Geophysical Research Letters* 22(16), 2183-2186 (August 15), 1995a.
- Vinnikov, K. Y., A. Robock, R. J. Stouffer, J. E. Walsh, C. L. Parkinson, D. J. Cavalieri, J. F. B. Mitchell, D. Garrett, and V. F. Zakharov. Global Warming and Northern Hemisphere Sea Ice Extent. *Science* 286(5446), 1934-1937, 1999.
- Wadhams P., Ice Thickness in the Arctic Ocean: The Statistical Reliability of Experimental Data. *Journal of Geophysical Research - Oceans*, 102(C13), 27951-27959 (December 15), 1997.
- Wadhams, P.. Evidence for Thinning of the Arctic Ice Cover North of Greenland. *Nature*, 345(6278), 795-797 (June 28), 1990.
- Weller, G. A.. Regional Impacts of Climate Change in the Arctic and Antarctic. *Annals of Glaciology*, 27, 543-552, 1998.
- Wolfe, S. A., S. R. Dallimore, and S. M. Solomon. Coastal Permafrost Investigations Along a Rapidly Eroding Shoreline, Tuktoyaktuk Northwest Territories, Canada. *Permafrost: Proceedings of Seventh International Conference, edited by A. G. Lewkowicz and M. Allard, Centre d'Études Nordiques, Université Laval, Quebec, Canada*, 1998.

Woo, M.-K., A. G. Lewkowicz, and W. R. Rouse. Response of the Canadian Permafrost Environment to Climatic Change. *Physical Geography*, 13(4), 287-317, 1992.

Native Peoples and Homelands – Cryo.

Rothrock, D. A., Y. Yu, and G. A. Maykut. Thinning of the Arctic Sea-Ice Cover. *Geophysical Research Letters*, 26(23), 3469, 1999.

Research Sectors of the Report

Water Sector – Cryo.

McCabe, G. J., and D. M. Wolock. General-Circulation-Model Simulations of Future Snowpack in the Western United States. *Journal of the American Water Resources Association*, 35(6), pp. 1473-1484, 1999.

Coastal Areas and Marine Resources Sector – Cryo.

Driscoll, N. W., and G. H. Haug. A Short Circuit in Thermohaline Circulation: A Cause for Northern Hemisphere Glaciation?. *Science*, 282, 436-438, 1998.

Johannessen, O. M., E. V. Shalina, and M. W. Miles. Satellite Evidence for an Arctic Sea Ice Cover in Transformation. *Science*, 286, 1937-1939, 1999.

Maslanik, J. A., M. C. Serreze, and T. Agnew. On the Record Reduction in 1998 Western Arctic Sea-Ice Cover. *Geophysical Research Letters*, 26, 1905-1908, 1999.

Oppenheimer, M. Global Warming and the Stability of the West Antarctic Ice Sheet. *Nature*, 393, 325-332, 1998.

Rothrock, D. A., Y. Yu, and G. A. Maykut. Thinning of the Arctic Sea-Ice Cover. *Geophysical Research Letters*, 26(23), 3469-3472, 1999.

Vinnikov, K. Y., A. Robock, R. J. Stouffer, J. E. Walsh, C.L. Parkinson, D. J. Cavalieri, J. F. B. Mitchell, D. Garrett, and V. F. Zakharov. Global Warming and Northern Hemisphere Sea Ice Extent. *Science*, 286, 1934-1937, 1999.

Forest Sector – Cryo.

Hoffman, C.. Let it Snow. *Smithsonian*, 29, 50-58, 1998.

Geology

Scenarios Used for the Report

Scenarios for Climate Variability and Change – Geo.

Hyde, W. T., and T. J. Crowley. Probability of Future Climatically Significant Volcanic Eruptions. *Journal of Climate*, 13, 1445-1450. 2000.

Report's Regional Elements of the U.S.

Pacific Northwest Region – Geo.

Tubbs, D.W.. Landslides in Seattle. *Washington Division of Geology and Earth Resources Information Circular 52, Washington Department of Natural Resources, Olympia, Washington*, 1974.

US Affiliated Islands – Geo.

Larsen, M. C., and A. Simon. Rainfall-Threshold Conditions for Landslides in a Humid-Tropical System, Puerto Rico. *Geografiska Annaler* 75A(1-2), 13-23, 1993.

Larsen, M.C., and A. J. Torres Sánchez. The Frequency and Distribution of Recent Landslides in Three Montane Tropical Regions of Puerto Rico. *Geomorphology*, 24, 309-331, 1998.

Human Dimensions

Scenarios Used for the Report

Scenarios for Climate Variability and Change – HumanD

Gaffen, D. J., and R. J. Ross. Increased Summertime Heat Stress in the U.S.. *Nature*, 396, 529-530. 1998.

IPCC (Intergovernmental Panel on Climate Change). Climate Change 1995: Impacts, Adaptations, and Mitigation of Climate Change: Scientific-Technical Analyses, edited by R. T. Watson, M. C. Zinyowera, and R. H. Moss. *Cambridge University Press, Cambridge, United Kingdom*, 879 pp. 1996b.

IPCC (Intergovernmental Panel on Climate Change). Climate Change 1995: Economic and Social Dimensions of Climate Change, edited by E. J. Bruce, Hoesung Lee, and E. Haites. Cambridge University Press, Cambridge, United Kingdom, 464 pp. 1996c.

Jones, P. D., P. Ya. Groisman, M. Coughlan, N. Plummer, W.-C. Wang, and T. R. Karl. Assessment of Urbanization Effects in Time Series of Surface Air Temperature Over Land, *Nature*, 347, 169-172. 1990.

Karl, T. R., and K. Trenberth. The Human Impact on Climate. *Scientific American*, 281, 100-105. 1999.

Karl, T. R., H. F. Diaz, and G. Kukla. Urbanization: Its Detection and Effect in the United States Climate Record. *Journal of Climate*, 1, 1099-1123. 1988.

Mahlman, J. D.. Uncertainties in Projections of Human-Caused Climate Warming. *Science*, 278, 1416-1417. 1997.

Mantua, N., S. Hare, Y. Zhang, J. Wallace, and R. Francis. A Pacific Interdecadal Climate Oscillation with Impacts on Salmon Production. *Bulletin of the American Meteorological Society*, 78, 1069-1079. 1997.

NAS (National Academy of Sciences). Policy Implications of Greenhouse Warming: Mitigation, Adaptation, and the Science Base. *Panel on Policy Implications of Greenhouse Warming*, National Academy Press, Washington, DC. 1992.

Steadman, R.G.. The Assessment of Sultrines, Part I: A Temperature-Humidity Index Based on Human Physiology and Clothing Science. *Journal of Climate and Applied Meteorology*, 18, 861-873. 1979.

The Potential Effects of Global Climate Change on the United States. *US Environmental Protection Agency*, EPA-230-05-89-050, edited by J. Smith and D. Tirpak, Washington, DC. 1989.

Wigley, T.M.L., A.K. Jain, B.S. Nyenzi, and P.R. Shukla. Implications of Proposed CO2 Emissions Limitations. *Technical paper for the Intergovernmental Panel on Climate Change*, Geneva, Switzerland, 41 pp. 1997.

Socioeconomic Context for Climate Impact Assessment – HumanD

Aging in the United States. US Bureau of the Census. 1999.
(<http://www.census.gov/population/www/socdemo/age.html#elderly>)

Carter, T. R., M. L. Parry, H. Harasawa, and S. Nishioka. IPCC Technical Guidelines for Assessing Climate Change Impacts and Adaptations. *National Institute for Environmental Studies*, Tsukuba, Japan. 1994.

Changnon, S. A., R. A. Pielke, Jr., D. Changnon, R. T. Sylves, and R. Pulwarty. Human Factors Explain the Increased Losses From Weather and Climate Extremes. *Bulletin of the American Meteorological Society* 81, 437-442. 2000.

Diamond, J.. Guns, Germs, and Steel: The Fates of Human Societies. *Norton*, New York. 1997.

- Downing, T. E., R. Butterfield, S. Cohen, S. Huq, R. Moss, A. Rahman, Y. Sokona, and L. Stephen. *Climate Change Vulnerability: Toward a Framework for Understanding Adaptability to Climate Change Impacts. Report to UNEP from the Environmental Change Institute, University of Oxford, Oxford, England.* May 2000.
- Glantz, M. T. (Ed.). *Societal Responses to Regional Climatic Change: Forecasting by Analogy.* Westview Press, Boulder, Colorado. 1988.
- Huntington, E.. *Civilization and Climate.* Yale University Press, New Haven, Connecticut. 1915.
- Kahneman, D. A., P. Slovic, and A. Tversky (Eds.). *Judgment under Uncertainty: Heuristics and Biases.* Cambridge University Press, New York. 1982.
- Kates, R. W.. The Interaction of Climate and Society. *Climate Impact Assessment, edited by R.W. Kates, J. H. Ausubel, and M. Berberian, John Wiley and Sons, Chichester, UK, SCOPE/ICSU, chap. 1, 3-36.* 1985.
- Krunkel, K. E., R. A. Pielke, Jr., and S. A. Changnon. Temporal Fluctuations in Weather and Climate Extremes that Cause Economic and Human Health Impacts: A Review. *Bulletin of the American Meteorological Society* 80, 1077-1098. 1999.
- Lambert, L. D.. The Role of Climate in the Economic Development of Nations. *Land Economics* 47, 339. 1975.
- Morgan, M. G., Uncertainty Analysis in Risk Ssessment. *Human and Ecological Risk Assessment* 4(1), 25-39. 1998.
- Morgan, M. G., and M. Henrion. *Uncertainty: A Guide to Dealing with Uncertainty in Quantitative Risk and Policy Analysis.* Cambridge University Press, New York. 1990.
- Mote, P. W., et al.. Impacts of Climate Variability and Change: Pacific Northwest. *A report of the Pacific Northwest Regional Assessment Group for the US Global Change Research Program, Climate Impacts Group, University of Washington, Seattle, Washington, November.* 1999.
- Myrdal, G.. *Asian Drama: An Inquiry into the Poverty of Nations.* Random House, New York. 1972.
- Parson, E. A., and K. Fisher-Vanden. Integrated Assessment Models of Global Climate Change. *Annual Review of Energy and the Environment* 22, 589-628. 1997.
- Patt, A., B. Tomm, A. Wolfe, and T. Wilbanks. Forecasts of Institutional Change in the United States: A Summary. *Prepared for the U.S. National Assessment of Possible Consequences of Climate Variability and Change, Oak Ridge National Laboratory, Oak Ridge, Tennessee.* 1998.
- Population Profile of the United States: 1997. *US Bureau of the Census Current Population Reports, Series P23-194, US Government Printing Office, Washington, DC.* 1998.

- Population Projections through 2050. *US Bureau of the Census, Document NP-T1*. February 11, 2000.
- Riebsame, W. E.. Research in Climate-Society Interaction. *Climate Impact Assessment*, edited by R. W. Kates, J. H. Ausubel, and M. Berberian, *SCOPE/ICSU*, Wiley, Chichester, UK, chap. 3, 69-84. 1985.
- Rosenberg, N. J. (Ed.). Towards an Integrated Assessment of Climate Change: The MINK Study. *Climatic Change (special issue) 24*, 1-173. 1993.
- Rotmans, J., and H. Dowlatabadi. Integrated Assessment Review. Human Choice and Climate Change. Edited by S. Rayner and E. Malone, *Battelle Press, Columbus, Ohio*. 1998.
- Sachs, J., T. Panayotou, and A. Peterson. Developing Countries and the Control of Climate Change: A Theoretical Perspective and Policy Implications. *CAERII discussion paper no. 44*, Cambridge, MA. November 1999.
- Scott, M. J., R. D. Sands, J. Edmonds, A. M. Liebertrau, and D. W. Engel. . Uncertainty in Integrated Assessment Models: Modeling with MiniCAM 1.0. *Energy Policy*, 27, 855-879. 1999.
- Survey of Current Business. *Bureau of Economic Analysis (BEA), US Treasury Department*. January 2000.
- Terleckyj, N. E.. Analytic Documentation of Three Alternate Socioeconomic Projections, 1997-2050. *NPA Data Services, Inc., Washington, DC*. May 1999a.
- Terleckyj, N. E.. Development of Three Alternate National Projection Scenarios, 1997-2050. *NPA Data Services, Washington DC*. July 26, 1999b.
- Weyant, J., O. Davidson, H. Dowlatabadi, J. Edmonds, M. Grubb, E. A. Parson, R. Richels, J. Rotmans, P. R. Shukla, R. S. J. Tol, W. Cline, and S. Fankhauser. Integrated Assessment of Climate Change: An Overview and Comparison on Approaches and Results. *Climate Change 1995: Economic and Social Dimensions of Climate Change*, edited by J. P. Bruce, H. Lee, and E. F. Haites, *Report of Working Group 3, Inter-governmental Panel on Climate Change (IPCC)*, chap. 10, 367-396, *Cambridge University Press, New York*. 1996.
- Wilbanks, T. J.. Forecasts of Technological Change in the United States: A Summary. Prepared for the U.S. National Assessment of Possible Consequences of Climate Variability and Change, Oak Ridge National Laboratory, Oak Ridge, Tennessee. 1998.

Report's Regional Elements of the U.S.

Northeast Region – HumanD

- Alpern, R., Impact of Global Warming on Water Resources: Implications for New York City and the New York Metropolitan Region. *The Baked Apple? Metropolitan New York in the Greenhouse, Annals of the New York Academy of Sciences*, vol. 790, edited by D. Hill, 86. 1996.
- Annual Flood Damage Report to Congress for Fiscal Year 1997. *US Army Corps of Engineers*, 1998. (<http://www.usace.army.mil/inet/functions/cw/cecwe/flood.htm>)
- Bloomfield, J.. Hot Nights in the City: Global Warming, Sea-Level Rise and the New York Metropolitan Region. *Environmental Defense Fund, New York*. 1999.
- Bureau of Economic Analysis, Survey of Current Business, June 2000, *U.S. Government Printing Office*. 2000. (<http://www.bea.doc.gov/bea/regional/data.htm>)
- Chestnut, L. G., W. S. Freffle, J. B. Smith, and L. S. Kalkstein. Analysis of Differences in Hot-Weather-Related Mortality Across 44 US Metropolitan Areas. *Environmental Sciences Policy*, 1, 59-70, 1998.
- Coastal Exposure and Community Protection. *Insurance Research Council, Wheaton, Illinois*, 45 pp.. 1995.
- Colwell, R. P. Epstein, D. Gubler, M. Hall, P. Reiter, J. Shukla, W. Sprigg, E. Takafuji, and J. Trtanj. Global Climate Change and Infectious Diseases, *Emerging Infectious Diseases*, 4, 451-452. 1998.
- Fisher, A., et al.. Preparing for a Changing Climate: The Potential Consequences of Climate Variability and Change. *Mid-Atlantic Foundations, US National Assessment*, in review, 2000. (http://www.essc.psu.edu/mara/results/foundations_report)
- Kalkstein, L. S., and J. J. Swift. An Evaluation of Climate/Mortality Relationships in the Mid-Atlantic Region and the Possible Impacts of Climate Change. *Prepared for inclusion in the Mid-Atlantic Regional Assessment*. 1998.
- Kalkstein, L. S., and J. S. Greene. An Evaluation of Climate/Mortality Relationships in Large U.S. Cities and the Possible Impacts of Climate Change. *Environmental Health Perspectives*, 105, 84-93. 1997.
- Kilbourne, E. M., K. Cho, T. S. Jones, S. B. Thacker, and F. I. Team. Risk Factors for Heat Stroke: A Case Central Study. *JAMA*, 247, 3332-3336. 1982.
- Klopatek, J. M., R. J. Olson, C. J. Emerson, and J. L. Jones. Land-Use Conflicts with Natural Vegetation in the United States. *Environmental Conservation*, 6, 191-200. 1979.
- Kunkel, K. E., R. A. Pielke Jr., and S. A. Changnon. Temporal Fluctuations in Weather and Extremes that Cause Economic and Human Health Impacts. *Bulletin of the American Meteorological Society*, 80, 1077-1098. 1999.

Martens, P.. How Will Climate Change Affect Human Health?. *American Scientist*, 87, 534-541. 1999.

Regional Economic Projection Series. *NPA Data Services, Inc., Washington, DC*. 1998.

Ricketts, T. H., E. Dinerstein, D. M. Olson, and C. Loucks. Who's Where in North America? Patterns of Species Richness and the Utility of Indicator Taxa for Conservation. *BioScience*, 49, 369-381. 1999.

Rock, B., and B. Moore III et al.. The New England Regional Assessment of the Potential Consequences of Climate Variability and Change, *US National Assessment*, in prep. 2000.

Rose, A., Y. Cao, and G. Oladosu, Simulating the Economic Impacts of Climate Change in the Mid-Atlantic region, *Climate Research*, 14, 175-183. 2000.

Rosenzweig, C., and W. Solecki, et al.. Climate Change and a Global City: An Assessment of the Metropolitan East Coast Region. *US National Assessment*, in review. 2000.

Watson, R. T., M. C. Zinyowera, and R. H. Moss (eds). The Regional Impacts of Climate Change: An Assessment of Vulnerability. *Cambridge University Press, New York*, 1998.

Southeast Region – HumanD

Billion Dollar US Weather Disasters, 1980-1999. *National Climatic Data Center*, July 20, 1999. (<http://www.ncdc.noaa.gov/ol/reports/billionz.html>)

Community Exposure and Community Protection: Hurricane Andrew's Legacy (IILPR and IRC). *Insurance Institute for Property Loss Reduction and Insurance Research Council Wheaton, IL (IILPR) and Boston, MA (IRC)*, 1995.

Glasmeier, A.. The History of Central and Southern Appalachia: A Socioeconomic Analysis. *paper presented at the Central and Southern Workshop on Climate Variability and Change, Morgantown, West Virginia, May 27-28*. 1998.

Heinz Center. The Hidden Costs Of Coastal Hazards: Implications For Risk Assessment and Mitigation. *Island Press, Washington, DC*, 220 pp. 1999.

Intergovernmental Panel on Climate Change. The Regional Impacts of Climate Change: An Assessment of Vulnerability. *Cambridge University Press, United Kingdom*, 514 pp., 1998.

Pielke, Jr., R.A., and R. A. Pielke, Sr.. Vulnerability to Hurricanes Along the US Atlantic and Gulf Coasts: Considerations of the Use of Long-Term Forecasts. *Hurricanes: Climate and Socioeconomic Impacts*, edited by H. F. Diaz and R. S. Pulwarty, Springer Publishing, New York, 147-184. 1997.

Ritschard, R. L., J. F. Cruise, and L. U. Hatch. Spatial and Temporal Analysis of Agricultural Water Requirements in the Gulf Coast of the United States. *Journal of American Water Resources Association*, 35(6), 1585-1596. 1999.

Rosenberg, N. J., R. C. Izaurralde, M. Tiscareño-López, D. Legler, R. Srinivasan, R. A. Brown, and R. D. Sands. Sensitivity of North American Agriculture to ENSO-Based Climate Scenarios and their Socio-Economic Consequences: Modeling in an Integrated Assessment Framework. *Pacific Northwest National Laboratory, Seattle, Washington*, 146 p. 1997.

US Bureau of the Census. County and City Data Book. *US Government Printing Office, Washington, DC, GPO # 003-024-08753-7*. 1994.

Midwest Region – HumanD

Allardice, D. R., and S. Thorp. A Changing Great Lakes Economy: Economic and Environmental Linkages. *SOLEC working paper presented at State of the Lakes Ecosystem Conference, U.S. Environmental Protection Agency, , EPA 905-R-95-017*. 1995.

Ausubel, J. H., Does Climate Still Matter?. *Nature*, 350, 649-652, 1991.

Billion Dollar US Weather Disasters 1980-1999. *National Climatic Data Center (NCDC), Asheville, North Carolina, US Department of Commerce, NOAA*. 1999. (<http://www.ncdc.noaa.gov/ol/reports/billionz.html>)

Brown, D. G., and J. M. Vasievich. A Study of Land Ownership Fragmentation in the Upper Midwest, *Proceedings, GIS/LIS 96 Conference, Denver, Colorado., pp. 1199-1209*. 1996.

Changnon, D.. 1997: Damaging Storms in the United States: Selection of Quality Data and Monitoring Indices. *Preprints of the Workshop on Indices and Indicators for Climate Extremes, NOAA/National Climatic Data Center, Asheville, North Carolina, USA, June 3-6, 1997, 24 pp..* 1997.

Changnon, S.A.. Impacts of 1997-98 El Nino-Generated Weather in the United States. *Bulletin. American Meteorological Society*, 80, (9), 1819-1928. 1999.

Changnon, S. A.. The Drought, Barges, and Diversion. *Bulletin. American Meteorological Society*, 70(9) 1092-1104. 1989.

Ecological Impacts from Climate Change: An Economic Analysis of Freshwater Recreational Fishing (220-R-95-004). EPA 1995. <http://www.epa.gov/globalwarming/publications/>

Demographic Databases, Household Databases Three Growth Projections 1967-2050. *NPA Data Services 1424 16th Street, NW, Suite 700, Washington, DC 20036*. 1999a

Injerd, D.. Panel Presentation, Impacts and Risks of Climate Change and Variability: Stakeholder Perspectives. *Adapting to Climate Change and Variability in the Great Lakes-St. Lawrence Basin: Proceedings of a Binational Symposium, edited by L. D. Mortsch, S. Quon, L. Craig, B. Mills, and B. Wrenn, Environment Canada, Downsview, Ontario*. 1998.

Kalkstein, L., and J. S. Greene. An Evaluation of Climate/Mortality Relationships in Large US Cities and the Possible Impacts of a Climate Change. *Environmental Health Perspectives*, 105(1), 84-93. 1997.

- Kalkstein, L., and K. Smoyer. The Impacts of Climate Change on Human Health: Some International Implications. *Experientia*, 49, 969-979. 1993.
- Karl, T. R.. Potential Application of Model Output Statistics (MOS) to Forecasts of Surface Ozone Concentrations. *Journal of Applied Meteorology*, 18, 254-265. 1979
- Kunkel, K. E., R. A. Pielke, Jr., and S. A. Changnon. Temporal Fluctuations in Weather and Climate Extremes that Cause Economic and Human Health Impacts: A Review. *Bulletin. American Meteorological Society*, 80, 1077-1098. 1999.
- Norgaard, K. J.. Impacts of the Subdivision Control Act of 1967 on Land Fragmentation in Michigan's Townships. *Ph.D. dissertation, Michigan State University, East Lansing, Michigan*. 1994.
- Rose, J. B., S. Daeschner, D. R. Easterling, F. C. Curriero, S. Lele, and J. A. Patz. . Climate and Waterborne Outbreaks in the US. *Journal of American Water Works Association*, 77-87, Sept. 2000.
- Smith, J. B.. Setting Priorities for Adapting to Climate Change. *Global Environmental Change*, 7(3), 251-264. 1997.
- Wang, J. X. L., and J. K. Angell. Air Stagnation Climatology for the United States (1948- 1998). *NOAA/Air Resources Laboratory ATLAS No. 1, Silver Spring, Maryland*, 73 pp.. 1999.
- Warbach, J. D., and D. Norberg. Michigan Society of Planning Officials Trend Futures Project: Public Lands and Forestry Trends Working Paper. *Michigan Society of Planning Officials, Rochester, Michigan*. 1995.

Great Plains Region – HumanD

- Barkema, A., and M. Drabenstott. Consolidation and Changes in Heartland Agriculture. *Economic Forces Shaping the Rural Heartland, Federal Reserve Bank of Kansas City*. 1996.
(<http://www.kc.frb.org/publicat/heartlnd/hrtmain.htm>)
- Donofrio, C., and D. S. Ojima. The Great Plains Today. Climate Change Impacts on the Great Plains. *Office of Science and Technology Policy and United States Global Change Research Program Workshop, compiled by D. S. Ojima, W. E. Easterling, and C. Donofrio, Colorado State University, Fort Collins, Colorado*, pp. 1-24, 1997.
- Drabenstott, M., and T. R. Smith. The Changing Economy of the Rural Heartland. *Economic Forces Shaping the Rural Heartland, Federal Reserve Bank of Kansas City*. 1996.
(<http://www.kc.frb.org/publicat/heartlnd/hrtmain.htm>)
- Gutmann, M.. Social and Demographic Changes in the Central Great Plains. *Paper presented at the Central Great Plains Regional Assessment of Climate Change Impacts Workshop, Loveland, Colorado, March 22-24, 1999, Sponsored by the Natural Resource Ecology Laboratory, Colorado State University, and the US Department of Energy*. 1999.

- Leitch, J. A., F. L. Leistritz, and D. A. Bangsund. Economic Effect of Leafy Spurge in the Upper Great Plains: Methods, Models, and Results. *Agricultural Economics Report No. 316*, North Dakota State University, Agricultural Experiment Station. 1994.
- Malcolm, J. R., and A. Markham. Climate Change Threats to the National Parks and Protected Areas of the United States. *World Wildlife Fund, Washington, DC*. 1998.
- National Research Council. Water Transfers in the West: Efficiency, Equity, and the Environment. *National Academy Press, Washington, DC*. 1992.
- Office of Technology Assessment. Preparing for an Uncertain Climate. *US Government Printing Office, Washington, DC*. 1993.
- Ojima, D. S., W. E. Easterling, C. Donofrio (Compilers). Climate Change Impacts on the Great Plains. *Workshop Report, May 27-29, 1997, Sponsored by Department of Energy, Office of Science and Technology Policy, US Global Change Research Program, and Colorado State University, College of Natural Resources, Colorado State University, Fort Collins, Colorado*. 1997.
- Opie, J.. The Law Of The Land: Two Hundred Years Of American Farmland Policy. *University of Nebraska Press, Lincoln, Nebraska*. 1987.
- Seielstad, G.. Progress Report For a Public Access Resource Center (PARC) Empowering the General Public to use EOSDIS – Implementation. *University of North Dakota, Grand Forks, North Dakota*. 1999.
- Skold, M. D.. Agricultural Systems and Economic Characteristics of the Great Plains. *Climate Change Impacts on the Great Plains, compiled by D. S. Ojima, W. E. Easterling, and C. Donofrio, Office of Science and Technology Policy and US Global Change Research Program Workshop, pp. 85-88, Colorado State University, Fort Collins, Colorado*. 1997.
- Stern, P.C., and W. E. Easterling, (Eds.). Making Climate Forecasts Matter. *National Academy Press, Washington, DC*. 1999.
- US Department of Commerce, Bureau of Economic Analysis, Regional Economic Analysis Division. June 1998.

West Region – HumanD

- Brown, T. C.. Projecting US Freshwater Withdrawals. *Journal of Water Resources Research*, 36, 769-780. 2000.
- California: An Economic Profile. *California Trade and Commerce Agency*. September 1997
(<http://commerce.ca.gov/california/economy>) .
- California's Population Tops 33 Million. California Department of Finance press release. May 1998.
- Compilation of Records in Accordance with Article V of the Decree of the Supreme Court of the United States in *Arizona versus California* dated March 9, 1964, for calendar years 1989-1997. *US Bureau of Reclamation*

- Demographic Databases; Three Growth Projections 1967-2025. *NPA Data Services, Inc., Washington, DC*. 1999.
- Diaz, H. F., and C. A. Anderson. Precipitation Trends and Water Consumption Related to Population in the Southwestern United States: A Reassessment. *Water Resources Research*, 31, 713-720, 1995.
- Engelthaler, D. M., et al., Climatic and Environmental Patterns Associated with Hantavirus Pulmonary Syndrome, Four Corners Region, United States. *Emerging Infectious Diseases* 5(1), 87-94. 1999.
- Estimate of 1999 Colorado River Use, Boulder City, Nevada. *US Bureau of Reclamation Memorandum to All Interested Persons*, May 26, 1999.
- Gleick, P. H., and E. P. Maurer. Assessing the Costs of Adapting to Sea Level Rise: A Case Study of San Francisco Bay. *The Pacific Institute for Studies in Development, Environment, and Security and the Stockholm Environment Institute, Stockholm, Sweden*. 1990.
- Gleick, P. H., and L. Nash. The Societal and Environmental Costs of the Continuing California Drought. *Pacific Institute for Studies in Development, Environment, and Security, Berkeley, California*, 66 pp. 1991.
- Gleick, P. H., P. Loh, S. V. Gomez, and J. Morrison. "California Water 2020: A Sustainable Vision," *Pacific Institute for Studies in Development, Environment, and Security, Oakland, California*, 113 pp. 1995.
- Gleick, P., Climate Change and California: Past, Present, and Future Vulnerabilities. *Societal Responses to Regional Climate Change: Forecasting By Analogy*, edited by M. H. Glantz, Westview Press, Boulder, Colorado. 1988.
- Gleick, P. H., Vulnerability of Water Systems. *Climate Change and US Water Resources*, edited by P. E. Waggoner, John Wiley & Sons, New York, pp. 223-240. 1990.
- Gross State Product by Component and Industry 1977-1997. *US Bureau of Economic Analysis*, 1999a (<http://www.bea.doc.gov/bea/regional/gsp/gsplist.html>)
- Hurd, B. H., J. M. Callaway, J. B. Smith, and P. Kirshen. Economic Effects of Climate Change on US Water Resources. *The Economic Impacts of Climate Change on the US Economy*, edited by R. Mendelsohn and J. E. Neumann, Cambridge University Press, Cambridge, England, 133-177. 1999b.
- Kalkstein, L. S., and J. S. Greene. An Evaluation of Climate/Mortality Relationships in Large US Cities and the Possible Impacts of a Climate Change, *Environmental Health Perspectives*, 105(1), 2-11. 1997.
- Knox, J. B.. Global Climate Change: Impacts on California, An Introduction and Overview. *Global Climate Change and California*, edited by J. B. Knox, University of California Press, Berkeley, California. 1991.

- Krieger, D. J.. Saving Open Spaces: Public Support for Farmland Protection. *Center for Agriculture in the Environment*, December 29, 1999
(<http://farm.fic.niu.edu/cae/wp/99-1/wp99-1.html>)
- Miller, K. A., S. L. Rhodes, and L. V. MacDonnell. Water Allocation in a Changing Climate: Institutions and Adaptation, *Climatic Change*, 35,157-177. 1997.
- Neumann, J. E., G. Yohe, R. Nicholls, and M. Manion. Sea-Level Rise and Global Climate Change: A Review of Impacts to the US Coasts. *Pew Center on Global Climate Change*, Arlington, Virginia. 2000.
- New Rules Sought on Tapping the Colorado River, *The New York Times*, May 23, 1999.
- Parmenter, R. R., E. P. Yadav, C. A. Parmenter, P. Ettestad, and K. L. Gage. Incidence of Plague Associated with Increased Winter-Spring Precipitation in New Mexico, *American Journal of Tropical Medical Hygiene*, 61, 814-821. 1999.
- Regional Economic Information System. *US Bureau of Economic Analysis*. 1999b
(<http://fisher.lib.virginia.edu/reis/>)
- Solley, W. B., R. R. Pierce, and H. A. Perlman. Estimated Use of Water in the United States in 1995. *US Geological Survey Circular 1200*, US Government Printing Office, Denver, Colorado. 1998.
- Solley, W. B.. Estimates of Water Use in the Western United States in 1990 and Water-Use Trends 1960-90. *Report to the Western Water Policy Review Advisory Commission*, Western Water Policy Review Advisory Commission, National Technical Information Service, Springfield, Virginia. 1997.
- Statistical Abstract of the United States: 1998 (118th edition). *US Census Bureau*, US Department of Commerce, Washington, DC. 1998.
- Templin, W. E.. California — Continually the Nation's Leader in Water Use. Accessed May 13, 1999.
(<http://ca.water.usgs.gov/wuse/awra/>)
- Tilting the Balance: Climate Variability and Water Resource Management in the Southwest. *Southwest Border Regional Workshop on Climate Variability and Change*. University of Texas at El Paso, March 2-4, 1998, University of Texas at El Paso, El Paso, Texas. National Aeronautics and Space Administration and University of Texas at El Paso. 1998.
- Titus, J. G., and V. Narayanan, The Risk of Sea Level Rise. *Climatic Change*, 33,151-212. 1996.
- Torn, M., E. Mills, and J. Fried. Will Climate Change Spark More Wildfire Damages? *Lawrence Berkeley Laboratory*, Berkeley, California, 1998
(<http://eande.lbl.gov/CBS/EMills/wild.html>)
- Updating the Hoover Dam Documents. *US Bureau of Reclamation*, Denver, Colorado. 1978.
- Western Water Policy Review Advisory Commission. Water in the West: Challenge for the Next Century. *National Technical Information Service*, Springfield, Virginia, 1998.

Wilkinson, R., and T. Rounds. Climate Change and Variability in California. *White paper for the California Regional Assessment, National Center for Ecological Analysis and Synthesis, University of California at Santa Barbara*, 1998b.

Wilkinson, R., and T. Rounds. Potential Impacts of Climate Change and Variability for California. *California regional workshop report, National Center for Ecological Analysis and Synthesis, University of California at Santa Barbara*. 1998a.

Willman, M. L.. State May Consider Mudslide Insurance for Homeowners, *Los Angeles Times*, February 14, 1998.

Wong, A. K., L. Owens-Viani, A. Steding, P. H. Gleick, D. Haasz, R. Wilkinson, M. Fidell, and S. Gomez. Sustainable Use of Water: California Success Stories. *Pacific Institute for Studies in Development, Environment, and Security, Oakland, California*. 1999.

Pacific Northwest Region – HumanD

Alig, R. J., D. M. Adams, B. A. McCarl. Impacts of Incorporating Land Exchanges Between Forestry and Agriculture in Sector Models. *Journal of Agricultural and Applied Economics*, 30, 2 (December), 389-401, 1998.

Callahan, B., E. Miles, and D. Fluharty. Policy Implications of Climate Forecasts for Water Resources Management in the Pacific Northwest. *Policy Sciences*, in press, 2000.

Canning, D. J.. Sea Level Rise in Washington State: State-of-the-Knowledge, Impacts, and Potential Policy Issues. *Washington Department of Ecology, Olympia, Washington*, 1991.

Cohen, S. J., K. A. Miller, A. F. Hamlet, and W. Avis. Climate Change and Resource Management in the Columbia River Basin. *Water International*, in press, 2000.

Glantz, M. H.. Consequences and Responsibilities in Drought Forecasting: The Case of Yakima, 1977. *Water Resources Research*, 18,(1), pp. 3-13, 1982.

Good, J. W.. Shore Protection Policy and Practices in Oregon: An Evaluation of Implementation Successes. *Coastal Management*, 22, 325-352, 1994.

Gray, K. N.. The Impacts of Drought on Yakima Valley Irrigated Agriculture and Seattle Municipal and Industrial Water Supply. *Master's thesis, School of Marine Affairs, University of Washington, Seattle, Washington*, 1999.

Hamlet, A. F., and D. P. Lettenmaier. Effects of Climate Change on Hydrology and Water Resources Objectives in the Columbia River Basin. *Journal of American Water Resources Association*, 35(6), 1597-1623, 1999.

Henjum, M. G., J. B. Karr, D. L. Bottom, D. Perry, J. C. Bednarz, S. G. Wright, S. A. Beckwitt, and E. Beckwitt. Interim Protection for Late-Successional Forests, Fisheries, and Watersheds: National Forests East of the Cascade Crest, Oregon, and Washington. *The Wildlife Society Technical Review 94-2, Bethesda, Maryland*, 245 pp., 1994.

- Historical State Population Series. *US Census Bureau*, 2000.
(http://www.census.gov/population/www/estimates/st_stts.html)
- Huffaker, R., N. K. Whittlesey, and P. R. Wandschneider. Institutional Feasibility of Contingent Water Marketing to Increase Migratory Flows for Salmon on the Upper Snake River. *Natural Resources Journal*, 33, 671-696, Summer 1993.
- Hulme, M., E. M. Barrow, N. W. Arnell, P. A. Harrison, T. C. Johns, and T. E. Downing. Relative Impacts of Human-Induced Climate Change and Natural Variability. *Nature*, 397, 688-691, 1999.
- Klahn, J.. This Time, City Folks Will Bear Cost of Restoring Species. (AP), *Seattle Times*, pg. 1, September 5, 1999.
- Miller, K. A.. Water Banking to Manage Supply Variability. *Advances in the Economics of Environmental Resources*, vol. 1., edited by D. C. Hall, pp. 185-210, JAI Press, Greenwich, Connecticut, 1996.
- Miller, K. A., S. L. Rhodes, L. J. MacDonnell. Water Allocation in a Changing Climate: Institutions and Adaptation. *Climatic Change*, 35, 157-177, 1997.
- Mote, P. W., et al.. Impacts of Climate Variability and Change: Pacific Northwest. *A report of the Pacific Northwest Regional Assessment Group for the US Global Change Research Program, Climate Impacts Group, University of Washington, Seattle, Washington*, November 1999.
- Northwest Region, West Coast Salmon and the Endangered Species Act. *National Marine Fisheries Service (NMFS)*. 2000.
(<http://www.nwr.noaa.gov/1salmon/salmesa/index.htm>)
- Quigley, R. W., R. W. Haynes, and R. T. Graham. Integrated Scientific Assessment for Ecosystem Management in the Interior Columbia Basin. *USDA Forest Service General Technical Report PNW-382, USDA Forest Service, Corvallis, Oregon*, 1996.
- Terleckyj, N. E.. Analytic Documentation of Three Alternate Socioeconomic Projections, 1997—2050. *NPA Data Services, Washington, DC*, 1999a.
- Terleckyj, N. E.. Development of Three Alternate National Projections Scenarios, 1997—2050. *NPA Data Services, Washington, DC*, 1999b.

Alaska – HumanD

- Berkes, F.. Indigenous Knowledge and Resource Management Systems in the Canadian Sub-Arctic. *Linking Social and Ecological Systems*, edited by F. Berkes, C. Folke, and J. Colding, Cambridge University Press, Cambridge, United Kingdom, pp. 98-128, 2000.
- BESIS, The Impacts of Global Climate Change in the Bering Sea Region. *An assessment conducted by the International Arctic Science Committee under its Bering Sea Impacts Group (BESIS), International Arctic Science Committee, Oslo, Norway*, 1997.

- Berman, M., G. P. Juday, R. Burnside. Climate Change and Alaska's Forests: People, Problems, and Policies. *Proceedings of a workshop, Assessing the consequences of climate change for Alaska and the Bering Sea region, Fairbanks, 29-30 October 1998*, edited by G. Weller and P. A. Anderson, Center for Global Change and Arctic System Research, University of Alaska Fairbanks, 1999.
- Callaway, D., J. Eamer, E. Edwardwen, C. Jack, S. Marcy, A. Olrun, M. Patkotak, D. Rexford, and A. Whiting. Effects of Climate Change on Subsistence Communities in Alaska. *Proceedings of a workshop, Assessing the consequences of climate change for Alaska and the Bering Sea region, Fairbanks, 29-30 October 1998*, edited by G. Weller and P. A. Anderson, Center for Global Change and Arctic System Research, University of Alaska Fairbanks, 1999.
- Cole, H., V. Colonell, and D. Esch. The Economic Impact and Consequences of Global Climate Change on Alaska's Infrastructure. *Proceedings of a workshop, Assessing the consequences of climate change for Alaska and the Bering Sea region, Fairbanks, 29-30 October 1998*, edited by G. Weller and P. A. Anderson, Center for Global Change and Arctic System Research, University of Alaska Fairbanks, 1999.
- Community Improvement Feasibility Report. *US Army Corps of Engineers, Alaska District, Anchorage, Alaska, (April), 1998.*
- Criddle, K. R., M. Hermann, J. A. Greenberg, and E. M. Feller. Climate Fluctuations and Revenue Maximization in the Eastern Bering Sea Fishery for Walleye Pollock. *North American Journal of Fisheries Management* 18(1), 1-10, 1998.
- Economic Status of US fisheries, 1996. *National Marine Fisheries Service (NMFS), US Government Printing Office, Washington, DC, 1996.*
- Goldsmith, O. S.. Structural Analysis of the Alaska Economy: A Perspective from 1997. *Prepared for Alaska Science and Technology Foundation by Institute of Social and Economic Research, University of Alaska, Anchorage, 1997.*
- Knapp, G., P. Livingston, and A. Tyler. Human Effects of Climate-Related Changes in Alaska Commercial Fisheries. *Proceedings of a workshop, Assessing the consequences of climate change for Alaska and the Bering Sea region, Fairbanks, 29-30 October 1998*, edited by G. Weller and P. A. Anderson, Center for Global Change and Arctic System Research, University of Alaska Fairbanks, 1999.
- Kvenvolden, K. A.. Potential Effects of Gas Hydrate on Human Welfare. *Proceedings of the National Academy of Sciences*, 96(7), 3420-3426, March 30, 1999.
- Leask, L.. Changing Ownership and Management of Alaska Lands. *Alaska Review of Social and Economic Conditions*, 22:4, October 1985.
- Mulvaney, K.. Arctic Voices: Global Warming is Changing the Traditional Eskimo Environment. *New Scientist*, pp. 55, November 14, 1998.
- Nash, C. E., and Associates, D. Duffy. Miller's Reach Fire Strategic Economic Recovery Plan. *Matanuska-Susitna Borough Department of Planning*, October 1997.
- Nixon, J. F.. Effect of Climatic Warming on Pile Creep in Permafrost. *Journal of Cold Regions Engineering*, 4, 1, pp. 67-73, 1990.

- Nuttall, M.. Protecting the Arctic: *Indigenous Peoples and Cultural Survival*. Harwood Academic Publishers, Amsterdam, 1998.
- Osterkamp, T. E. and V. E. Romanovsky. Impacts of Thawing Permafrost as a Result of Climatic Warming, *EOS*, 77(46), 29, 1996
- Prowse, T. D., and M. Conly. Impacts of Climatic Variability and Flow Regulation on Ice Jam Flooding of a Northern Delta. *Hydrological Processes*, 12, 1589-1610, 1998.
- Sabo, G., III.. Long-term Adaptations Among Arctic Hunter-Gatherers. *Garland Publishing, London, United Kingdom*, 1991.
- Smith, O. P., and L. Johnston. The Warming World: Strategy for Alaskan Response. *Summary of a workshop, January 5-6, 2000, University of Alaska, Anchorage*, 2000.
- State Population Projections. *US Census Bureau*, 2000.
(<http://www.census.gov/population/www/projections/stproj.html>)
- Wenzel, G. W.. Warming the Arctic: Environmentalism and the Canadian Inuit. *Human Ecology and Climate Change*, edited by D. L. Peterson and D. R. Johnson, Taylor & Francis, Washington, DC, 1995.
- Wolfe, R. J., and R. G. Bosworth. Subsistence in Alaska: 1994 Update. *Alaska Department of Fish and Game, Division of Subsistence, Fairbanks, Alaska*, 1994.

US Affiliated Islands – HumanD

- A Report on the State of the Islands. *OIA (Office of Insular Affairs), US Department of Interior*. 1999. URL (<http://www.doi.gov/oia/report99.html>)
- Climate Change 1995: Impacts, Adaptations and Mitigation of Climate Change: Scientific-Technical Analyses. *Edited by R. T. Watson, M.C. Zinyowera, and R. H. Moss, IPCC, Intergovernmental Panel on Climate Change, Cambridge University Press, NY, pp 289-324*. 1995.
- CNMI (Commonwealth of the Northern Mariana Islands) official website accessed May 19, 2000 (http://www.saipan.com/cnmiinfo/info_pg4.htm#sec100)
- Cuddihy, L. W., and C. P. Stone. Alteration of Native Hawaiian Vegetation: Effects of Humans, Their Activities, and Introductions. *University of Hawaii National Park Studies Unit, Honolulu*, 138 pp., 1990.
- Diaz, H. F., and R. S. Pulwarty. Decadal Climate Variability, Atlantic Hurricanes, and Societal Impacts: An Overview. *Hurricanes: Climate and Socioeconomic Impacts*, edited by H. F. Diaz and R. S. Pulwarty, Springer-Verlag, New York, 292 pp., 1997.
- Emanuel, K. A.. Climate Variations and Hurricane Activity: Some Theoretical Issues. *Hurricanes: Climate and Socioeconomic Impacts*, edited by H. F. Diaz and R. S. Pulwarty, Springer-Verlag, New York, 292 pp., 1997.

FSM (Federated States of Micronesia). National Communication to the United Nations Framework Convention on Climate Change, Palikir, Pohnpei, FM. *Country Coordinator for national climate change program -- John Mooteb, PICCAP Coordinator - Department of Economic Affairs, PO Box PS-Palikir, Pohnpei, Federated States of Micronesia*, (email: jemooteb@hotmail.com), 1999.

FEMA (Federal Emergency Management Administration) Web site Cited Aug 1, 2000.
<http://www.fema.gov/library/cat4o5>.

Hamnett, M. P., C. L. Anderson, C. Guard, and T. A. Schroeder. Cumulative ENSO Impacts: Tropical Cyclones Followed by Drought. *The Pacific ENSO Applications Center: Lessons learned for regional climate forecasting (revised report)*, Pacific ENSO Applications Center, Honolulu, HI, 2000.

Pielke, R. A., Jr., and C. W. Landsea. La Nina, El Niño, and Atlantic Hurricane Damages in the United States. *Bulletin of the American Meteorological Society*, 80(10), 2027-2033, 1999.

Potter, B., E. L. Towle, and D. Brower. The Virgin Islands Natural Hazard Mitigation Plan. *Island Resources Foundation for the Virgin Islands Territorial Emergency Management Agency (VITEMA)*. St. Thomas, December, 1995.

Rapaport, M. (Ed.). The Pacific Islands: Environment and Society. *The Bess Press, Honolulu, Hawaii*, 442 pp., 1999.

Titus, J. G., R. A. Park, S. P. Leatherman, J. R. Weggel, M. S. Greene, P. W. Mausel, S. Brown, C. Gaunt, M. Trehan, and G. Yohe. Greenhouse Effect and Sea-Level Rise: The Cost of Holding Back the Sea. *Coastal Management*, 19, 171-204, 1991.
(http://www.epa.gov/globalwarming/publications/impacts/sealevel/cost_of_holding.html)

Wilkinson, C., O. Linden, H. Cesar, G. Hodgson, J. Rubens, and A. E. Stong. Ecological and Socioeconomic Impacts of 1998 Coral Mortality in the Indian Ocean: An ENSO Impact and a Warning of Future Change?. *Ambio*, 28, 2, 188-196, 1999.

Native Peoples and Homelands – HumanD

1990 Census of Population, Characteristics of American Indians by Tribe and Language. *US Bureau of the Census, 1990 CP-3-7, Washington, DC*, 1990.

Akerlof, G. A.. An Economic Theorist's Book of Tales. *University of Cambridge Press, Cambridge United Kingdom*, 1984.

Axelrod, R.. The Evolution of Cooperation. *Basic Books, Inc., New York*, 1984.

Axelrod, R.. The Complexity of Cooperation. *Princeton University Press, Princeton, New Jersey*, 1997.

Basso, K.. Wisdom Sits in Places: Landscape and Language Among the Western Apache. *University of New Mexico Press, Albuquerque, New Mexico*, 1996.

BIA (Bureau of Indian Affairs) Website, 2000a.
(http://www.doi.gov/bia/aitoday/q_and_a.html).

- BIA (Bureau of Indian Affairs) Website, 2000b.
(http://www.gdsc.bia.gov/images/bia_usa_chip.jpg)
- Bordewich, F. M.. Killing the White Man's Indian: Reinventing Native Americans at the End of the Twentieth Century. *Anchor Books, New York*, 1996.
- Brams, S. J., and A. D. Taylor. Fair Division. *Cambridge University Press, Cambridge, United Kingdom*, 1996.
- Brody, H. Maps and Dreams. *Pantheon Books, New York*, 1982.
- Brown, D.. Bury My Heart at Wounded Knee: An Indian History of the American West. *Henry Holt, New York*, 487 pp., 1991.
- Climate Change 1995: Impacts, Adaptations, and Mitigation of Climate Change: Scientific-Technical Analyses. *IPCC (Intergovernmental Panel on Climate Change), Contribution of Working Group II to the Second Assessment Report of the Intergovernmental Panel on Climate Change*, edited by R.T. Watson, M. C. Zinyowera, and R. H. Moss, *Cambridge University Press, Cambridge, United Kingdom*, 880 pp., 1996b.
- Cornell, S.. The Return of the Native: American Indian Political Resurgence. *Oxford University Press, Oxford United Kingdom*, 1998.
- Deloria, V., Jr.. Red Earth, White Lies: Native Americans and the Myth of Scientific Fact. *Fulcrum Publishing, Golden Colorado*, 271 pp., 1997.
- Energy Consumption and Renewable Energy Development Potential on Indian lands. *ELA (Energy Information Administration), Department of Energy, Washington DC*, March 2000.
- Engelthaler, D. M., et al.. Climatic and Environmental Patterns Associated with Hantavirus Pulmonary Syndrome, Four Corners region, United States. *Emerging Infectious Diseases*, 5, 87- 94, 1999.
- Getches, D. H, C. F. Wilkinson, and R. H. Williams, Jr.. Cases and Materials on Federal Indian Law, Fourth Edition. *West Group, St. Paul, Minnesota*, 1998.
- Goodman, R.. Lakota Star Knowledge. *Sinte Gleska University Press, Rosebud, South Dakota*, 1990.
- Hardin, R.. Collective Action. *Johns Hopkins University Press, Baltimore, Maryland*, 1982.
- Hiss, T.. The Experience of Place. *Vintage Books, New York*, 1991.
- Houser, S.. Mending the Circle: Peer Group Lending for Microenterprise Development in Tribal Communities. *Rural Development Strategies*, edited by David W. Sears and J. Norman Reid, *Nelson Hall Publishers, Chicago, Illinois*, pp. 204-232. 1995.

- Johnson, T.. World Out of Balance: In a Prescient Time Native Prophecy Meets Scientific Prediction. *Native AMERICAS: Hemispheric Journal of Indigenous Issues*, Volume XVI, Fall/Winter, 8-25, 1999.
- Keller, R. H.. America's Native Sweet: Chippewa Treaties and the Right to Harvest Maple Sugar. *American Indian Quarterly*, Spring, 117-135, 1989.
- Lands Under the Jurisdiction of the Bureau of Indian Affairs. *DOI (Department of the Interior)*, 1996. (<http://www.doi.gov/bia/realty/area.html>.)
- Lawson, M. L.. Dammed Indians. *University of Oklahoma Press, Norman, Oklahoma*, 1982.
- Moreno, F.. In the Arctic, Ice is Life. *Native AMERICAS: Hemispheric Journal of Indigenous Issues*, XVI (Fall/Winter), 42-45, 1999.
- NPNH (Native Peoples/Native Homelands Assessment Team). Report of the Native Peoples/Native Homelands Climate Change Workshop, 28 October – 1 November 1998, Albuquerque, New Mexico. *National Aeronautics and Space Administration, Washington DC*, in press, 2000.
- Olson, M.. The Logic of Collective Action. *Harvard University Press, Cambridge, Massachusetts*, 1965.
- Pevar, S. L.. The Rights of Indians and Tribes, Second Edition. *Southern Illinois University Press, Carbondale, Illinois*, 1992.
- Ritzenthaler, R. E., and P. Ritzenthaler. The Woodland Indians of the Western Great Lakes. *Waveland Press, Prospect Heights, Illinois*, 1991.
- Schelling, T. C.. Micromotives and Macrobehavior. *W. W. Norton & Co., New York*, 1978.
- Schelling, T. C.. Choice and Consequence. *Harvard University Press, Cambridge, Massachusetts*, 1984.
- Schmaljohn, C., and B. Hjelle. Hantaviruses: A Global Disease Problem. *Emerging Infectious Diseases*, 3, 95-104, 1997.
- Snipp, C. M.. American Indians: The First of This Land. *The Russell Sage Foundation, New York*, 1991.
- Spinden, H. J., translator. Songs of the Tewa. *Originally published in 1933 by The Exposition of Indian Tribal Arts, Inc., republished by Sunstone Press, Santa Fe, New Mexico*, 1993.
- Tiller, V. E. V.. American Indian Reservations and Trust Areas. *Economic Development Administration, United States Department of Commerce, Washington, DC*, 1996.
- Trosper, R. L.. American Indian Poverty on Reservations. *Changing Numbers, Changing Needs: American Indian Demography and Public Health*, edited by G. Sandefur, R. R. Rindfuss, and B. Cohen, pp. 172-195, *National Research Council, Washington, DC*, 1996.
- Trosper, R. L.. Traditional American Indian Policy. *Contemporary Native American Political Issues*, edited by T. R. Johnson, pp. 139-63, *Altamira Press, Walnut Creek, California*, 1999.

- Tyler, H. A.. Pueblo Birds and Myths. *Northland Publishing, Flagstaff, Arizona*, 1991.
- Vennum, T.. Wild Rice and the Ojibway People. *Minnesota Historical Society Press, St. Paul, Minnesota*, 1988.
- White, R., and W. Cronon. Ecological Change and Indian-White Relations. *Handbook of North American Indians, Volume IV*, edited by W. Sturtevant, *Smithsonian Institution, Washington, DC*, pp. 417-429 1988.
- Gallagher, W.. The Power of Place. *Harper Perennial, New York*, 1993.

Research Sectors of the Study

Agriculture Sector – HumanD

- Adams, R.M., S.A. Hamilton, and B.A. McCarl. The Benefits of Air Pollution Control: The Case of Ozone and US Agriculture. *American Journal of Agricultural Economics* 68:886-894, 1986.
- Baumes, H.. A Partial Equilibrium Sector Model of US Agriculture Open to Trade: A Domestic Agricultural and Agricultural Trade Policy Analysis. *Ph.D. thesis, Purdue University*, 1978.
- Burton, R.O., and M.A. Martin. Restrictions on Herbicide Use: An Analysis of Economic Impacts on US Agriculture. *North Central Journal of Agricultural Economics* 9:181-194, 1987.
- Chang, C.C., B.A. McCarl, J.W. Mjelde, and J.W. Richardson. Sectoral Implications of Farm Program Modifications. *American Journal of Agricultural Economics* 74:38-49, 1992.
- Darwin, R., M. Tsigas, J. Lewandrowski, and A. Raneses. World Agriculture and Climate Change: Economic Adaptations. *Agricultural Economic Report No. 703, US Department of Agriculture, Natural Resources and Environmental Division, Economic Research Service, Washington, DC*, 1995.
- Fajardo, D., B. A. McCarl, and R. L. Thompson. A Multi Commodity Analysis of Trade Policy Effect: The Case of Nicaraguan Agriculture. *American Journal of Agricultural Economics* 63:23-31, 1981.
- Fellin, L., and S. Fuller. Effects of Privatization of Mexico's Railroad System on US-Mexico Overland Grain/Oilseed Trade. *Transportation Research Forum* Vol 37, N1:46-64, 1998.
- Johnson, D. G.. The World Grain Economy and Climate Change to the Year 2000: Implications for Policy. *National Defense University Press, Washington, DC*, 50 pp., 1983.
- Kaiser, H. M., S. J. Riha, D. S. Wilks, D .G. Rossier, and R. Sampath. A Farm-Level Analysis of Economic and Agronomic Impacts of Gradual Warming. *American Journal of Agricultural Economics*, 75, 387-398, 1993.

- McCarl, B.A. and T.H. Spreen. Price Endogenous Mathematical Programming As a Tool For Sector Analysis, *American Journal of Agricultural Economics* 62:87-102, 1980.
- Preparing for an Uncertain Climate. *Office of Technology Assessment, US Congress, Washington, DC*, 1993.
- Reilly, J., N. Hohmann, and S. Kane. Climate Change and Agricultural Trade: Who Benefits, Who Loses?. *Global Environmental Change*, 4(1),24-36, 1994.
- Reilly, J. et al.. Agriculture in a Changing Climate: Impacts and Adaptations. *Climate Change 1995: Impacts, Adaptations, and Mitigation of Climate Change*, edited by R. T. Watson, M. C. Zinyowera, and R. H. Moss, Cambridge University Press, Cambridge, United Kingdom, pp. 427-469, 1995.
- Rosenberg, N.J., 1993. Towards an Integrated Assessment of Climate Change: The MINK study. *Climatic Change*., 24: 1-175.
- Rosenzweig, C., and M. L. Parry Potential Impact of Climate Change on World Food Supply. *Nature*, 367,133-138, 1994.
- Rosenzweig, C., J. T. Ritchie, J. W. Jones, G. Y. Tsuji, and P. Hildebrand. Climate Change and Agriculture: Analysis of Potential International Impacts. *American Society of Agronomy Special Publication No. 59, American Society of Agronomy, Madison, Wisconsin*, 382 pp., 1995.
- Smith, J. B., and D. Tirpak (Eds.). The Potential Effects of Global Climate Change on the United States. *EPA-230-05-89-050, US Environmental Protection Agency, Washington, DC*, 1989.
- Takayama, T. and G.G. Judge. Spatial and Temporal Price and Allocation Models. *North-Holland Publishing Company*, 1971.

Water Sector – HumanD

- Baldwin, C. K., U. Lall, and F. H. Wagner. Time Scales of Climate Variability Important to Western Water Managers and Their Views on Climate Change. *Proceedings of the AWRA Specialty Conference on Potential Consequences of Climate Variability and Change to Water Resources of the United States, American Water Resources Association, Herndon, VA*, pp. 23-26, 1999.
- Bernard, S. M., J. Rose, B. Sherman, M. McGeehin, J. Scheraga, and J. Patz. Water, Health and Climate: Assessing the Potential Consequences of Climate Change and Variability on Waterborne Disease Risk. *Proceedings of the AWRA Specialty Conference on Potential Consequences of Climate Variability and Change to Water Resources of the United States, American Water Resources Association, Herndon, VA*, pp. 409-413, 1999.
- Dellapenna, J. W.. Adapting the Law of Water Management to Global Climate Change and Other Hydropolitical Stresses. *Journal of the American Water Resources Association*, 35(6), pp.1301- 1326, 1999a.

- Dellapenna, J. W.. Legal Responses to Global Climate Change. *Proceedings of the AWRA Specialty Conference on Potential Consequences of Climate Variability and Change to Water Resources of the United States, American Water Resources Association, Herndon, VA*, pp. 13-16, 1999b.
- Climate Change 1995: Impacts, Adaptations and Mitigation of Climate Change: Scientific-Technical Analyses. *Intergovernmental Panel on Climate Change (IPCC), Cambridge University Press, New York*, 1996.
- Eheart, J. W., A. J. Wildermuth, and E. E. Herricks. The Effects of Climate Change and Irrigation on Criterion Low Streamflows Used for Determining Total Maximum Daily Loads. *Journal of the American Water Resources Association*, 35(6) pp. 1365-1372, 1999.
- Frederick, K. D., and G. E. Schwarz. Socioeconomic Impacts of Climate Change on US Water Supplies. *Journal of the American Water Resources Association*, 35(6), pp. 1563-1584, 1999a.
- Frederick, K. D., and G. E. Schwarz. Socioeconomic Impacts of Climate Variability and Change on US Water Supplies. *unpublished manuscript*, 1999b.
- Georgakakos, A. P., H. Yao, and K. P. Georgakakos. Vulnerability of River Basin Management to Climate Variability and Change. *Proceedings of the AWRA Specialty Conference on Potential Consequences of Climate Variability and Change to Water Resources of the United States, American Water Resources Association, Herndon, VA*, pp. 49-56, 1999.
- Gleick, P. H.. Vulnerability of Water Systems. *Climate Change and the US Water Resources*, edited by P. E. Waggoner, pp. 223-240, John Wiley and Sons, New York, 1990.
- Gleick, P. H., and L. Nash. The Societal and Environmental Costs of the Continuing California Drought. *Pacific Institute for Studies in Development, Environment, and Security, Berkeley, California*, 1993.
- Gomez, S., and A. Steding. California Water Transfers: An Evaluation of the Economic Framework and a Spatial Analysis of the Potential Impacts. *Pacific Institute for Studies in Development, Environment, and Security, Oakland, California*, 57 pp., 1998.
- Hatch, U., S. Jagtap, J. Jones, and M. Lamb. Potential Effects of Climate Change on Agricultural Water Use in the Southeast US. *Journal of the American Water Resources Association*, 35(6), pp. 1561-1563, 1999.
- Hamlet, A. F., and D. P. Lettenmaier. Effects of Climate Change on Hydrology and Water Resources Objectives in the Columbia River Basin. *Journal of the American Water Resources Association*, 35(6), pp.1597-1625, 1999.
- Hurd, B. J., N. Leary, R. Jones, and J. Smith. Relative Regional Vulnerability of Water Resources to Climate Change. *Journal of the American Water Resources Association*, 35(6), pp.1399-1410, 1999a.
- Hurd, B, R. Jones, N. Leary and J. Smith. A Regional Assessment and Database of Water Resource Vulnerability to Climate Change. *Proceedings of the AWRA Specialty*

Conference on Potential Consequences of Climate Variability and Change to Water Resources of the United States, American Water Resources Association, Herndon, VA, pp. 45-48, 1999b.

Jehl, D.. Tampa Bay Looks to the Sea to Quench its Thirst. *The New York Times*, March 12, 2000.

McCabe, G. J., and D. M. Wolock. Sensitivity of Irrigation Demand in a Humid-Temperate Region to Hypothetical Climate Change. *Climatic Change*, 37, pp. 89-101, 1992.

National Inventory of Dams. *US Army Corps of Engineers*, 1996.

National Study of Water Management During Drought: The Report to Congress. *US Army Corps of Engineers, IWR Report 94-NDS-12*, September 1996.

O'Connor, R. E., B. Yarnal, R. Neff, R. Bord, N. Wiefek, C. Reenock, R. Shudak, C. L. Jacoy, P. Pascale, and C. G. Knight. Weather and Climate Extremes, Climate Change, and Planning: Views of Community Water System Managers in Pennsylvania's Susquehanna River Basin. *Journal of the American Water Resources Association*, 35(6), 1999.

Schilling, K. E.. Water Resources: The State of the Infrastructure. *Report to the National Council on Public Works Improvement, Washington, DC*, May 1987.

Snover, A., E. Miles, and B. Henry. Regional Workshop on the Impacts of Global Climate Change on the Pacific Northwest. *Final report, University of Washington, Seattle*, July 1997.

Solley, W. B., R. R. Pierce, and H. A. Perlman. Estimated Use of Water in the United States in 1995. *US Geological Survey Circular 1200*, Denver, Colorado, 1998.

Solley, W. B., and H. A. Perlman. Factors Affecting Water Use Patterns in the United States, 1950-1995, With Projections to 2040. *Proceedings of the AWRA Specialty Conference on Potential Consequences of Climate Variability and Change to Water Resources of the United States, American Water Resources Association, Herndon, VA*, pp. 65-67, 1999.

Stakhiv, E., and K. Schilling. What Can Water Managers Do About Global Warming?, *Update Water Resources, No. 112, The Universities Council on Water Resources*. pp. 33-40, 1998.

Strategic Directions for the US Geological Survey Groundwater Resources Program: A Report to Congress. *US Department of the Interior, Geological Survey*, November 30, 1998.

Valuing Groundwater: Economic Concepts and Approaches. National Research Council, National Academy Press, Washington, DC, 1997.

Vandemoer, C.. Impacts of Climate Change on American Indian Water Rights and Resources. *Proceedings of the AWRA Specialty Conference on Potential Consequences of Climate Variability and Change to Water Resources of the United States, American Water Resources Association, Herndon, VA*, pp. 17-21, 1999.

Water Transfers in the West: Efficiency, Equity, and the Environment. *National Research Council, National Academy Press, Washington, DC, 1992.*

Western Water Policy Review Advisory Commission. Water in the West: Challenge for the Next Century. *National Technical Information Service, Springfield, Virginia, 1998.*

Health Sector – HumanD

Action Plan for Beaches and Recreational Waters. *United States Environmental Protection Agency (USEPA), Office of Research and Development, Office of Water, Washington, DC, 1999.*

Ahlholm J.U., M.L. Helander, J. Savolainen. Genetic and Environmental Factors Affecting the Allergenicity of Birch (*Betula pubescens* ssp. *czerepanovii* [Orl.] Hamet-ahti) Pollen. *Clinical and Experimental Allergy* 28:1384-8, 1998.

American Housing Survey for the United States in 1995. *US Bureau of the Census, Washington, DC, 1997a.*

American Society for Microbiology (ASM). Microbial Pollutants in Our Nation's Water: Environmental and Public Health Issues. *American Society for Microbiology, Office of Public Affairs, Washington, DC, 1998.*

American Thoracic Society. Health Effects of Outdoor Air Pollution, Part 2. *American Journal of Respiratory and Critical Care Medicine*, 153, 477-98, 1996.

Applegate, W. B., J. W. Runyan, Jr., L. Brasfield, M. L. Williams, C. Konigsberg, and C. Fouche. Analysis of the 1980 Heat Wave in Memphis. *Journal of the American Geriatrics Society*, 29, 337-42, 1981.

Atherholt, T.B., M. W. LeChevallier, W. D. Norton, and J. S. Rosen. Effect of Rainfall on Giardia and Crypto. *Journal of the American Water Works Association*, 90(9), 66-80, 1998.

Baden, D. G., L. E. Glemming, and J. A. Bean. Marine Toxins. *Handbook of Clinical Neurology, Intoxications of the Nervous System: Part II*, edited by F. de Wolf, Elsevier Science, Amsterdam, 141- 75, 1996.

Bennett, J. V., S. D. Homberg, M. F. Rogers, and S. L. Soloman. Infectious and Parasitic Diseases. *American Journal of Preventive Medicine*, 55, 102-14, 1987.

Beneson, A. S.. Control of Communicable Diseases Manual, 16th Edition. *American Public Health Association, Washington DC, 577, 1995.*

Buechley, R. W., J. V. Bruggen, and L. E. Truppi. Heat Island = Death Island?. *Environmental Research*, 5, 85-92, 1972.

Childs, J. E., B. S. Schwartz, T. G. Ksiazek, R. R. Graham, J. W. LeDuc, and G. E. Glass. Risk Factors Associated with Antibodies to Leptospire in Inner-City Residents of Baltimore: A Protective Role for Cats. *American Journal of Public Health*, 82(4), 597-9, 1992.

- Clarke, J. F.. Some Effects of the Urban Structure on Heat Mortality. *Environmental Research*, 5, 93-104, 1972.
- Colwell, R. R., and J. A. Patz. Climate, Infectious Disease and Health: An Interdisciplinary Perspective. *American Academy of Microbiology, Washington, DC*, pp. 24, 1998.
- Coye, M. J., and M. Goldoft. Microbiological Contamination of the Ocean, and Human Health. *New Jersey Medicine*, 86(7), 533-8, 1989.
- Craun, G. F.. Waterborne Disease in the United States. *CRC Press, Boca Raton, Florida*, pp. 295, 1998.
- Davies, C. J., and J. Mazurek. Pollution Control in the United States: Evaluating the system. *Resources for the Future Washington, DC*, pp. 366, 1998.
- Day, J. C.. Population Projections of the United States by Age, Sex, Race and Hispanic oOigin: 1995- 2050. *Current population reports provided by the US Bureau of the Census, US Government Printing Office, Washington, DC*, 1996.
- Demers, R.Y., A. Thiermann, P. Demers, and R. Frank. Exposure to *Leptospira Icterohaemorrhagiae* in Inner-City and Suburban Children: A Serologic Comparison. *Journal of Family Practice*, 17(6), 1007- 11, 1983.
- Di Maio, D. J., and V. J. M. Di Maio. The Effects of Heat and Cold: Hyperthermia and Hypothermia, Forensic Pathology. *CRC Press, Boca Raton, Florida*, pp. 503, 1993.
- Drabek, T. E.. The Social Dimensions of Disaster. *Federal Emergency Management Agency (Emergency Management Institute), Emmitsburg, Maryland*, pp. 619, 1996.
- Emerging Infections: Microbial Threats to Health in the United States. *Institute of Medicine, Washington, DC*, 1992.
- Engelthaler, D. M., et al.. Climatic and Environmental Patterns Associated with Hantavirus Pulmonary Syndrome, Four Corners Region, United States. *Emerging Infectious Diseases*, 5(1), 87-94, 1999.
- FoodNet. Centers for Disease Control and Prevention (CDC), 1999c.
<http://www.cdc.gov/ncidod/dbmd/foodnet/98surv.htm>
- Frost, F. J., G. F. Craun, and R. L. Calderon. Waterborne Disease Surveillance. *Journal of the American Water Works Association*, 88(9), 66-75, 1996.
- Gerba, C. P., J. B. Rose, and C. N Haas. Sensitive Populations: Who Is At the Greatest Risk?. *International Journal of Food Microbiology*, 30(1-2), 113-23, 1996.
- Gill, J., L. M. Stark, and G. C. Clark. Dengue Surveillance in Florida, 1997-1998. *Emerging Infectious Diseases*, 6(1), in press, 2000.
- Gilles, H. M.. Epidemiology of Malaria. *Bruce-Chwatt's Essential Malariology edited by H. M. Gilles and D. A. Warrell, Edward Arnold Division of Hodder & Stoughton, London, England*, 124-63, 1993.

- Glickman, T. S., and E. D. Silverman. Acts of God and Acts of Man. *Resources for the Future*, CRM 92-02, Washington, DC, 1992.
- Gorjanc, M. L., W. D. Flanders, J. VanDerslice, J. Hersh, and J. Malilay. Effects of Temperature and Snowfall on Mortality in Pennsylvania. *American Journal of Epidemiology*, 149, 1152-60, 1999.
- Gubler, D. J.. Resurgent Vector-Borne Diseases as a Global Health Problem. *Emerging Infectious Diseases*, 4(3), 442-50, 1998.
- Harvell, C. D., et al.. Emerging Marine Diseases--Climate Links and Anthropogenic Factors. *Science*, 285(5433), 1505-1510, 1999.
- Health Commissioner Releases *E. Coli* Outbreak Report. *New York Department of Health*, March 31 2000. <http://www.health.state.ny.us/nysdoh/commish/2000/ecoli.htm>
- Health, United States, 1998 With Socioeconomic Status and Health Chartbook. *National Center for Health Statistics (NCHS), US Department of Health and Human Services, Hyattsville, Maryland*, pp. 465, 1998.
- Heat-Related Deaths -- United States, 1993. *Centers for Disease Control and Prevention (CDC), Morbidity and Mortality Weekly Report* 42, 558-560, 1993.
- Heat-Related Mortality--Chicago, July 1995. *Centers for Disease Control and Prevention (CDC), Morbidity and Mortality Weekly Report* 44, 577-579, 1995.
- HIV/AIDS Surveillance Report, December 1998. *Centers for Disease Control and Prevention (CDC), Atlanta, Georgia*, 10, December 1998.
- Hobbs, F. B., and B. L. Damon. 65+ In the United States. *Bureau of the Census, US Government Printing Office, Washington, DC*, 1998.
- Hoxie, N. J., J. P. Davis, J. M. Vergeront, R. D. Nashold, and K. A. Blair. Cryptosporidiosis - Associated Mortality Following a Massive Waterborne Outbreak in Milwaukee, Wisconsin, *American Journal of Public Health*, 87(12), 2032-35, 1997.
- Hurricane Andrew: South Florida and Louisiana, August 23-26, 1992, Natural Disaster Survey Report, *US Dept. of Commerce, National Oceanic and Atmospheric Administration, National Weather Service, Silver Spring, Maryland*, 1993.
- Johnston, J. M., S. F. Becker, and L. M. McFarland. *Vibrio Vulnificus*, Man and the Sea. *JAMA*, 253(19), 2850-2853, 1985.
- Jones, T. S., A. P. Liang, E. M. Kilbourne, M. R. Griffin, P. A. Patriarca, S. G. Fite-Wassilak, R. J. Mullan, R. F. Herrick, H. D. Donnell, C. Keewhan, et al. et al.. Morbidity and Mortality Associated With the July 1980 Heat Wave in St. Louis and Kansas City, Missouri. *JAMA*, 247, 3327-3331, 1982.

- Kalkstein, L. S., and J. S. Greene. An Evaluation of Climate/Mortality Relationships in Large US Cities and the Possible Impacts of Climate Change. *Environmental Health Perspectives*, 105(1), 84-93, 1997.
- Kalkstein, L. S., and K. E. Smoyer. The Impact of Climate Change on Human Health: Some International Implications. *Experientia* 49(11), 969-79, 1993.
- Kenzie, W. R., et al.. A Massive Outbreak in Milwaukee of Cryptosporidium Infection Transmitted Through the Public Water Supply. *New England Journal of Medicine*, 331(3), 161-167, 1994.
- Kilbourne, E. M., K. Choi, T. S. Jones, S. B. Thacker, and F. I. Team. Risk Factors for Heat Stroke: A Case-Control Study. *JAMA*, 247, 3332-3336, 1982.
- Ko, A. I., M. Galvao Reis, C. M. Ribeiro Dourado, WD, Jr., Johnson, and L. W. Riley. Urban Epidemic of Severe Leptospirosis in Brazil. *Salvador Leptospirosis Study Group, Lancet*, 354(9181), 820-825, 1999.
- Lambert, W. E., J. M. Samet, and D. W. Dockery. Community Air Pollution. *Environmental and Occupational Medicine*, edited by W. N. Rome, pp. 1501-1522, Lippincott-Raven, Philadelphia, Pennsylvania, 1998.
- Lanciotti, R. S., et al.. Origin of the West Nile Virus Responsible for an Outbreak of Encephalitis in the Northeastern United States. *Science*, 286(5448), 2333-2337, 1999.
- Landrigan, P. J., W. Suk, and R. W. Amler. Chemical Wastes, Children's Health, and the Superfund Basic Research Program. *Environmental Health Perspectives*, 107(6), 423-7, 1999.
- Lipp, E. K., and J. B. Rose The Role of Seafood in Foodborne Diseases in the United States of America. *Revue Scientifique Et Technique*, 16: 620-40, 1997.
- Logue J. N., H. Hansen, and E. Struening. Emotional and Physical Distress Following Hurricane Agnes in Wyoming Valley of Pennsylvania. *Public Health Report* 94, 495-502, 1979.
- Marzuk, P. M., K. Tardiff, A. C. Leon, C. S. Hirsch, L. Portera, M. I. Iqbal, M. K. Nock, and N. Hartwell. Ambient Temperature and Mortality From Unintentional Cocaine Overdose, *JAMA*, 279(22), 1795-800, 1998.
- McMichael, A. J., A. Haines, R. Sloof, and S. Kovats. Climate Change and Human Health. *World Health Organization*, Geneva, 297, 1996.
- Mead, P. S., L. Slutsker, V. Dietz, L. F. McCaig, J. S. Bresee, C. Shapiro, P. M. Griffen , and R. V. Tauxe. Food-Related Illness and Death in the United States. *Emerging Infectious Diseases* 5(5), 607-25, 1999.
- Monath, T. P.. Epidemiology. *St. Louis Encephalitis*. Edited by T. P. Monath, American Public Health Association, Washington, DC, 1980.
- National Air Pollutant Emission Trends Update: 1970-1996. *United States Environmental Protection Agency (USEPA)*, Washington, DC, 1997a.

- National Mitigation Strategy: Partnerships for Building Safer Communities. *Federal Emergency Management Agency (FEMA)*, 1996, <http://www.fema.gov/mit/ntmstrat.htm>
- Outbreak of Escherichia Coli O157:H7 and Campylobacter Among Attendees of the Washington County Fair – New York, 1999. *Centers for Disease Control and Prevention (CDC), Morbidity and Mortality Weekly Report*, 48(36), 803, 1999a.
- National Primary Drinking Water Regulations: Interim Enhanced Surface Water Treatment; Final Rule. *United States Environmental Protection Agency (USEPA)*, Washington, DC, 1998b.
- Noji, E. K.. The Nature of Disaster: General Characteristics and Public Health Effects. *The Public Health Consequences of Disasters*, edited by E. K. Noji, pp. 3-20, *Oxford University Press*, New York, 1997.
- Norris, F. H., J. L. Perilla, J. K. Riad, K. Kaniasty, and E. Lavizzo. Stability and Change in Stress, Resources, and Psychological Distress Following Natural Disaster: Findings From a Longitudinal Study of Hurricane Andrew. *Anxiety, Stress and Coping*, 12, 363-96,, 1999.
- Parmenter R.R., E.P. Yadav, C.A. Parmenter, P. Ettestad, K.L. Gage. Incidence of Plague Associated With Increased Winter-Spring Precipitation in New Mexico. *American Journal of Tropical Medicine and Hygiene* 61:814-21, 1999.
- Patz, J.A., M.A. McGeehin, S.M. Bernard, K.L. Ebi, P.R. Epstein, A. Grambsch, D.J. Gubler, P. Reiter, I Romieu, J.B. Rose, J.M. Samet, and J. Trtanj. The Potential Health Impacts of Climate Variability and Change in the United States: Executive Summary of the Report of the Health Sector of the U.S. National Assessment. *Environmental Health Perspectives*, 108(4), 367-376, 2000.
- Philip, C. B., and L. E. Rozeboom. Medico-Veterinary Entomology: A Generation of Progress. *History of Entomology*, edited by R. F. Smith, T. E. Mittler, and C. N. Smith, *Annual Reviews, Inc.*, Palo Alto, California, 1973.
- Pinner, R.W., S. M. Teutsch, L. Simonsen, L. A. Klug, J. M. Graber, M. J. Clarke, and R. L. Berkelman. Trends in Infectious Diseases Mortality in the United States. *JAMA*, 275(3), 189-93, 1996.
- PulseNet. *Centers for Disease Control and Prevention (CDC)*, 1999b.
<http://www.cdc.gov/ncidod/dbmd/pulsenet/pulsenet.htm>
- Quarantelli, E. L.. An Assessment of Conflicting Views on Mental Health: The Consequences of Traumatic Events. *Trauma and Its Wake: The Study and Treatment of Post-Traumatic Stress Disorder*, vol 4 (Figley CR, ed).Brunner/Mazel, New York, 173-215, 1985.
- Ramlow, J. M., and L. H. Kuller. Effects of the Summer Heat Wave of 1988 on Daily Mortality in Allegheny County, Pennsylvania. *Public Health Report* 105, 283-9, 1990.

- Reeves, W. C., and W. M. Hammon. Epidemiology of the Arthropod-Borne Viral Encephalitides in Kern County, California, 1943-1952. *University of California at Berkeley Public Health Report 4*, 1-257, 1962.
- Reiter, P.. Global Warming and Mosquito-Borne Disease in USA. *Lancet*, 348(9027, 622, 1996.
- Reiter, P.. Global Climate Change and Mosquito-Borne Disease. *Encyclopedia of Human Ecology*, edited by K. Watt, Academic Press, London, United Kingdom, 1999.
- Rethinking the Ozone Problem in Urban and Regional Air Pollution. *National Research Council (NRC)*, National Academy Press, Washington, DC, 1991.
- Romieu, I. Epidemiological Studies of the Health Effects Arising From Motor Vehicle Air Pollution. *Urban Traffic Pollution*, edited by D. Schwela and O. Zali, pp. 10-69, World Health Organization, New York, 1999.
- Rose, J. B., and J. Simonds. King County Water Quality Assessment: Assessment of Public Health Impacts Associated with Pathogens and Combined Sewer Overflows. *Seattle, Washington, Report for Water and Land Resources Division. Department of Natural Resources*, 1998.
- Schmaljohn, C., and B. Hjelle. Hantaviruses: A Global Disease Problem. *Emerging Infectious Diseases 3*(2), 95-104, 1997.
- Schuman, S. H.. Patterns of Urban Heat-Wave Deaths and Implications for Prevention: Data from New York and St. Louis During 1966. *Environmental Research*, 5, 59-75, 1972.
- Semenza, J. C.. Are Electronic Emergency Department Data Predictive of Heat-Related Mortality?. *Journal of Medical Systems*, 23(5), 419-424, 1999.
- Semenza, J. C., J. McCullough, D. W. Flanders, M. A. McGehein, and J. R. Lumpkin. Excess Hospital Admissions During the 1995 Heat Wave in Chicago. *American Journal of Preventive Medicine*, 16, 269- 77, 1999.
- Semenza, J. C., C. H. Rubin, and K. H. Falter. Heat-Related Deaths During the July 1995 Heat Wave in Chicago. *New England Journal of Medicine*, 335(2), 84-90, 1996.
- Shapiro, R. L., S. Altekruse, and P. M. Griffin. The Role of Gulf Coast Oysters Harvested in Warmer Months in *Vibrio Vulnificus* Infections in the United States, 1988-1996. *Journal of Infectious Diseases*, 178(3), 752, 1998.
- Spitalnic, S. J., L. Jagminas, and J. Cox. An Association Between Snowfall and ED Presentation of Cardiac Arrest. *American Journal of Emergency Medicine*, 14(6), 572-3, 1996.
- Statistical Abstracts of the United States: 1997 (11th edition). *US Bureau of the Census*, Washington, DC, 1997b.
- Summary of Natural Hazard Deaths for 1991 in the US. *National Weather Service, Rockville, Maryland*, 1992.

Summary of Natural Hazard Statistics. *National Weather Service (NWS)*, 1999.
<http://www.nws.noaa.gov/om/hazstats.htm>

Tauxe, R.V.. Emerging Foodborne Diseases: An Evolving Public Health Challenge. *Emerging Infectious Diseases*, 3(4), 425-34, 1997.

Trevejo, R. T., et al. Epidemic Leptospirosis Associated with Pulmonary Hemorrhage - Nicaragua, 1995. *Journal of Infectious Diseases*, 178(5), 1457-63, 1998.

Water on Tap: A Consumer's Guide to the Nation's Drinking Water. *United States Environmental Protection Agency (USEPA), Office of Water, Washington, DC*, 1997b.

Watts, D. M., D. S. Burke, B. A. Harrison, R. E. Whitmire, and A. Nisalak. Effect of Temperature on the Vector Efficiency of *Aedes Aegypti* for Dengue 2 Virus. *American Journal of Tropical Medicine and Hygiene*, 36(1), 143-52, 1987.

Weniger, B. G., M J. Blaser, J. Gedrose, E. C. Lippy, and D. D. Juranek. An Outbreak of Waterborne Giardiasis Associated With Heavy Water Runoff Due to Warm Weather and Volcanic Ashfall. *American Journal of Public Health*, 73(8), 868-72, 1983.

Whitman, S., G. Good, E.R. Donohue, N. Benbow, W. Shou, and S. Mou. Mortality in Chicago Attributed to July 1995 Heat Wave. *American Journal of Public Health*, 87, 9, 1515-8, 1998.

Coastal Areas and Marine Resources Sector – HumanD

Analytic Documentation of Three Alternate Socioeconomic Projections. *NPA Data Services, Inc., 1997-2050, Washington, DC*, May 1999.

Bricker, S. B., C. G. Clement, D. E. Pirhall, S. P. Orlando, and D. R. G. Farrlow. National Estuarine Eutrophication Assessment: A Summary of Conditions, Historical Trends, and Future Outlook. *National Oceanic and Atmospheric Administration (NOAA), Silver Spring, Maryland*, 1999.

Central and Southern Florida Project (C&SF) Comprehensive Review study, Draft Integrated Feasibility Report and Programmatic Environmental Impact Statement. *US Army Corps of Engineers, Jacksonville District, Jacksonville, Florida*, 1998.

Climate Change 1995: Impacts, Adaptations, and Mitigation of Climate Change: Scientific-Technical Analysis. *Intergovernmental Panel on Climate Change (IPCC), Cambridge University Press, Cambridge, United Kingdom*, 1996.

Costanza, R.. The Ecological, Economic, and Social Importance of the Oceans. *Ecological Economics*, 31, 199-213, 1999.

Culliton, T. J.. Population: Distribution, Density and Growth. *NOAA state of the coast report, National Oceanic and Atmospheric Administration (NOAA), Silver Spring, Maryland*, 1998. URL: <http://state-of-coast.noaa.gov/topics/html/pressure.html>

- Frank, K. T., R. I. Perry, and K. F. Drinkwater. Predicted Response of Northwest Atlantic Invertebrate and Fish Stocks to CO₂-Induced Climate Change. *Transactions of the American Fisheries Society*, 119, 353-365, 1990.
- Good, J. W.. Shore Protection Policy and Practices in Oregon: An Evaluation of Implementation Success. *Coastal Management*, 22, 335-352, 1994.
- Gornitz, V. M., R. C. Daniels, T. W. White, and K. R. Birdwell. The Development of a Coastal Risk Assessment Database: Vulnerability to Sea-Level Rise in the US Southeast. *Coastal Hazards: Perception, Susceptibility, and Mitigation*, edited by C. W. Finkl, Jr., Journal of Coastal Research, Special Issue 12, pp. 327-338, 1994.
- Harwell, M. A.. Science and Environmental Decision Making in South Florida. *Ecological Applications*, 8(3), 580-590, 1998.
- Herbert, P. J., J. D. Jarrell, and M. Mayfield. The Deadliest, Costliest, and Most Intense Hurricanes of This Century (and other frequently requested hurricane facts). *NOAA Technical Memorandum NWS TPC-1, National Hurricane Center* 1996.
- Houston, J. R.. International Tourism and US Beaches. *Shore and Beach*, 64(3), 27-35, 1996.
- Kleypas, J. A., J. W. McManus, and L. A. B. Menez. Environmental Limits to Coral Reef Development: Where Do We Draw the Line?. *American Zoologist*, 39, 146-159, 1999b.
- Kronman, M.. Market Report: Year in Review. *National Fisherman*, p. 40, April 1999.
- Miller, M. L., and J. Auyong. Coastal Zone Tourism: A Potent Force Affecting Environment and Society. *Marine Policy*, 15(2), 75-99, 1991.
- Natural Resource Valuation: A Report by the Nation's Estuary Program. *Environmental Protection Agency (EPA)*, 1997.
- Neumann, J. E., G. Yohe, R. Nicholls, and M. Maino. Sea-Level Rise and Global Climate Change: A Review of Impacts to US Coasts. *Pew Center on Global Climate*, 2000. URL: http://www.pewclimate.org/projects/env_sealevel.html.
- Pielke, R. A., Jr., and C. W. Landsea. La Nina, El Nino, and Atlantic Hurricane Damages in the United States. *Bulletin of the American Meteorological Society*, 80(10), pp. 2027-2033, 1999.
- Projected Impact of Relative Sea-Level Rise on the National Flood Insurance Program. *Report to Congress, Federal Emergency Management Agency, Washington, DC, Federal Insurance Administration*, 1991.
- Striking a Balance: Improving Stewardship of Marine Areas. *National Research Council, National Academy Press, Washington DC*, 1997a.
- Vitousek, P. M., J. Aber, S. E. Bayley, R.W. Howarth, G. E. Likens, P. A. Matson, D.W. Shindler, W. H. Schlesinger, and G. D. Tilman. Human Alteration of the Global Nitrogen Cycle: Sources and consequences. *Ecological Applications*, 7(3), 737-750, 1997.

Yohe, G., J. Neumann, P. Marshall, and H. Ameden. The Economic Cost of Greenhouse Induced Sea-Level Rise for Developed Property in the United States. *Climatic Change*, 32, 387-410, 1996.

Forest Sector – HumanD

Adams, D. M., R. J. Alig, B. A. McCarl, J. M. Callaway, and S. Winnett. An Analysis of the Impacts of Public Timber Harvest Policies on Private Forest Management in the United States. *Forest Science*, 42, 343-357, 1996.

Air Quality Criteria for Ozone and Related Photochemical Oxidants. *US Environmental Protection Agency, EPA Report No. EAP/600/P-93/004af, Vol. II, US EPA, Research Triangle Park, North Carolina*, 1996.

Alig, R. J. Econometric Analysis of Forest Acreage Trends in the Southeast. *Forest Science*, 32, 119-134, 1986.

Berz, G. A. Global Warming and the Insurance Industry. *Interdisciplinary Science Reviews*, 18, 120-125, 1993.

Blatner, K.. Special Forest Products Markets in the Pacific Northwest with Global Implications. Special Forest Products – Biodiversity Meets the Marketplace. *Edited by N. C. Vance and J. Thomas, US Department of Agriculture, Washington, DC*, 1997.

Bruce, J. P., H. Lee, and E. Haites. Climate Change 1995: Economic and Social Dimensions of Climate Change. *Contribution of Working Group III to the Second Assessment Report of the Intergovernmental Panel on Climate Change, Cambridge University Press, Cambridge, United Kingdom*, 1996.

Cordell, H. K., J. C. Bergstrom, L. A. Hartmann, and D. B. K. English. An Analysis of the Outdoor Recreation and Wilderness Situation in the United States: 1989-2040. *General Technical Report RM-189, USDA Forest Service Rocky Mountain Forest and Range Experiment Station, Fort Collins, Colorado*, 1990.

Cordell, H. K., B. L. McDonald, R. J. Teasley, J. C. Bergstrom, J. Martin, J. Bason, and V. R. Leeworthy. Outdoor Recreation Participation Trends. *Outdoor Recreation in American Life: A National Assessment of Demand and Supply Trends*, edited by H. K. Cordell, Sagamore Publishing, Champaign, Illinois, 1999.

Fisher, A., et al.. Mid-Atlantic Overview. *Pennsylvania State University*, 2000,
http://www.essc.psu.edu/mara/results/foundations_report/index.html#report

Ireland, L. C., D. Adams, R. Alig, C. J. Betz, C. Chen, M. Mutchins, B. A. McCarl, K. Skog, and B. W. Sohngen. Assessing Socioeconomic Impacts of Climate Change on US Forests, Wood Product Markets, and Forest Recreation. *BioScience*, in press, 2001.

Leemans, R., A. van Amstel, C. Battjes, E. Kreileman, and S. Toet. The Land Cover and Carbon Cycle and Consequences of Large-Scale Utilization of Biomass as an Energy Source. *Global Environmental Change*, 6, 335-357, 1996.

- Loomis, J., and J. Crespi. Estimated Effects of Climate Change on Selected Outdoor Recreation Activities in the United States. *The Impact of Climate Change on the United States Economy*, edited by R. Mendelsohn and J. E. Neumann, Cambridge University Press, Cambridge, England, 1999.
- Lugo, A. E.. Effects and Outcomes of Hurricanes in a Climate Change Scenario. *The Science of the Total Environment*, 262, 243-252, 2000.
- Matthews, E., and A. Hammond. Critical Consumption Trends and Implications. *World Resources Institute*, Washington, DC, 1999.
- Mendelsohn, R., and M. Mackowiki. The Impact of Climate Change on Outdoor Recreation. *The Impact of Climate Change on the United States Economy*, edited by R. Mendelsohn and J. E. Neumann, Cambridge University Press, Cambridge, England, 1999.
- Musselman, R. C., and W. J. Massman. Ozone Flux to Vegetation and its Relationship to Plant Response and Ambient Air Quality Standards. *Atmospheric Environment*, 33, 65-73, 1999.
- Perez-Garcia, J., L. A. Joyce, A. D. McGuire, and C. S. Binkley. Economic Impact of Climatic Change on the Global Forest Sector. *Economics of Carbon Sequestration in Forestry*, edited by R. A. Sedjo, R. N. Sampson, and J. Wisniewski, Lewis Publishers, Boca Raton, Florida, 1997.
- Sohngen, R., and R. Mendelsohn. Valuing the Impact of Large-Scale Ecological Change in a Market: The Effect of Climate-Change on US Timber. *American Economic Review*, 88, 686- 710, 1998.
- Torn, M. S., E. Mills, and J. S. Fried. Will Climate Change Spark More Wildfire Damages. *LBLN Report No. LBNL-42592*, Lawrence Berkeley National Laboratory, California, 1999.
- Vitousek, P. M., J. D. Aber, R. W. Howarth, G. E. Likens, P. A. Matson, D. W. Schindler, W. H. Schlesinger, and D. G. Tilman. Human Alteration of the Global Nitrogen Cycle: Sources and Consequences. *Ecological Applications*, 7, 737-750, 1997.
- Wall, G.. Implications of Global Climate Change for Tourism and Recreation in Wetland Areas. *Climatic Change*, 40, 371-389, 1998.
- Watson, R. T., M. C. Zinyowera, and R. H. Moss, (Eds.). Climate Change 1995. Impacts, Adaptations, and Mitigation of Climate Change: Scientific-Technical Analyses. *Cambridge University Press*, Cambridge, United Kingdom, 1996.
- Watson, R. T., M. C. Zinyowera, R. H. Moss, (Eds.). The Regional Impacts of Climate Change: An Assessment of Vulnerability. Intergovernmental Panel on Climate Change. *Cambridge University Press*, New York, 1998.

Hydrosphere

Scenarios Used for the Report

Scenarios for Climate Variability and Change – Hydro.

- Dresler, P. V., M. C. MacCracken, and A. Janetos. National Assessment of the Potential Consequences of Climate Variability and Change for the United States. *Water Resources Update*, 112, 16-24. 1998.
- Durman, C. F., J. M. Gregory, D. C. Hassell, and R. G. Jones. The Comparison of Extreme European Daily Precipitation Simulated by a Global And a Regional Climate Model for Present and Future Climates. *Quarterly Journal of the Royal Meteorological Society*, in press. 2000.
- Felzer, B.. Hydrological Implications of GCM Results for the U.S. National Assessment. *Proceedings of the Specialty Conference on Potential Consequences of Climate Variability and Change to Water Resources of the United States*, pp. 69-72, May 10-12. 1999. Atlanta, Georgia, American Water Resources Association, Middleburg, Virginia. 1999.
- Felzer, B., and P. Heard. Precipitation Differences Amongst GCMs Used for the U.S. National Assessment. *Journal of the American Water Resources Association*, 35(6), 1327-1339. 1999.
- Groisman, P. Ya., et al.. Changes in the Probability of Heavy Precipitation: Important Indicators of Climatic Change. *Climatic Change*, 42, 243-283. 1999.
- Groisman, P. Ya., R. W. Knight, and T. R. Karl. Heavy Precipitation and Streamflow in the United States: Trends in the 20th Century. *Bulletin of the American Meteorological Society*, in press. 2000.
- Hayden, B. P.. Extratropical Storms: Past, Present, and Future, pp. 93-96. *Proceedings of Specialty Conference on Potential Consequences of Climate Variability and Change to Water Resources of the United States*, May 1999, American Water Resources Association. 1999.
- Hennessy, K. J., J. M. Gregory, and J. F. B. Mitchell. Changes in Daily Precipitation Under Enhanced Greenhouse Conditions. *Climate Dynamics*, 13, 667-680. 1997.
- Hulme, M., T. J. Osborn, and T. C. Johns. Precipitation Sensitivity to Global Warming: Comparison of Observations With HadCM2 Simulations. *Geophysical Research Letters*, 25(17), 3379-3382. 1998.
- Karl, T. R., and R. W. Knight. Secular Trends of Precipitation Amount, Frequency, and Intensity in the United States. *Bulletin of the American Meteorological Society*, 79, 231-241. 1998.

- Karl, T. R., and W. E. Reibsam. The Impact of Decadal Fluctuations in Mean Precipitation and Temperature on Runoff: A Sensitivity Study Over the United States. *Climatic Change*, 15, 423-447. 1989.
- Kothavala, Z.. Extreme Precipitation Events and the Applicability of Global Climate Models to Study Floods and Drought. *Mathematics and Computers in Simulations*, 43, 261-268. 1997.
- Kunkel, K. E., K. Andsager, and D. R. Easterling. Long-Term Trends in Extreme Precipitation Events Over the Conterminous United States and Canada. *Journal of Climate*, 12, 2515-2527. 1999.
- Langbein, W. B.. Annual Runoff in the United States. *US Geological Survey Circular No. 5*, Department of the Interior, Washington, DC, 1949 (reprinted 1959).
- Legates, D. R.. Global and Terrestrial Precipitation: A Comparative Assessment of Existing Climatologies: A reply. *International Journal of Climatology*, 17, 779-783. 1997.
- Legates, D. R., and T. L. DeLiberty. Precipitation Measurements Biases in the United States. *Water Resources Bulletin*, 29, 855-861. 1993.
- Legates, D. R., and C. J. Wilmott. Mean Seasonal and Spatial Variability in Gauge-Corrected Global Precipitation. *International Journal of Climatology*, 10, 111-127. 1990b.
- Lins, H. F., and J. R. Slack. Streamflow Trends in the United States, *Geophysical Research Letters*, 26(2), 227-230. 1999.
- Palmer W.. Meteorological Drought., *Research Paper No. 45*, US Weather Bureau, NOAA Library and Information Services Division, Washington, DC, 58 pp. 1965.
- Trenberth, K.E., and G. Branstator. Issues in Establishing Causes for the 1988 Drought Over North America, *Journal of Climate*, 5, 159-172. 1992.
- Wetherald, R.T., and S. Manabe. Detectability of Summer Dryness Caused by Greenhouse Warming. *Climatic Change*, 43, 495-511. 1999.
- Woodhouse, C., and J. Overpeck. 2000 Years of Drought Variability in the Central United States. *Bulletin of the American Meteorological Society*, 79, 2693-2714. 1998.

Vegetation and Biogeochemical Scenarios – Hydro.

- Knight, D. H., T. J. Fahey, and S. W. Running. Factors Affecting Water and Nutrient Outflow from Lodgepole Pine Forests in Wyoming. *Ecological Monographs*, 55, 29-48. 1985.
- Vörösmarty, C. J., et al.. Continental Scale Model of Water Balance and Fluvial Transport: An Application to South America. *Global Biogeochemical Cycles* 3, 241-265 1989.

Socioeconomic Context for Climate Impact Assessment – Hydro.

- Wilhite, D. A. (Ed.). Drought: A Global Assessment. *Hazards and Disasters, Vol. 2*. Routledge Publishers, New York. 2000.

Report's Regional Elements of the U.S.

Northeast Region – Hydro.

- Gibson, J. R., and R. G. Najjar. Modeling Chesapeake Bay Salinity Under Climate Change. *Limnology and Oceanography*, in review. 2000.
- Groisman, P. Ya , R.W. Knight, T.R. Karl, and H.F. Lins. Heavy Precipitation and Streamflow in the United States: Trends in the 20th Century, *Bulletin of the American Meteorological Society*, in press. 2000.
- Karl, T. R., and R. W. Knight, Secular Trends in Precipitation Amount, Frequency, and Intensity in the United States. *Bulletin of the American Meteorological Society*, 79, 231-241. 1998.
- Kunkel, K. E., K. Andsager, and D. R. Easterling. Long-Term Trends in Extreme Precipitation Events Over the Conterminous United States. *Journal of Climate*, 12, 2515-2527. 1999.
- McCabe, G. J., Jr., and M. A. Ayers. Hydrologic Effects of Climate Change in the Delaware River Basin, *Water Resources Bulletin*, 25(6). 1989.
- Neff, R., H. Chang, C. G. Knight, R. G. Najjar, B. Yarnal, and H. A. Walker. Impact of Climate Variation and Change on Mid-Atlantic Hydrology and Water Resources. *Climate Research*, 14, 207-218. 2000.
- Solley, W. B., R. R. Pierce, and H. A. Perlman. Estimated Water Use in the United States in 1995. *US Geological Survey Circular 1200*, Washington, DC. 1998.
- Yarnal, B., D. L. Johnson, B. Frakes, G. I. Bowles, and P. Pascale. The Flood of '96 in the Susquehanna River Basin. *Journal of the American Water Resources Association*, 33, 1299-1312, 1997.

Southeast Region – Hydro.

- Cruise, J. F., A. S. Limaye, and N. Al-Abed. Assessment of the Impacts of Climate Change on Water Quality in the Southeastern United States. *Journal of American Water Resources Association*, 35(6), 1539-1550. 1999.
- Felzer, B., and P. Heard. Hydrological Implications of GCM Results for the US National Assessment. *Journal of American Water Resources Association*, 35(6), 1327-1339. 1999.
- Goolsby, D. A., W. A. Battaglin, G. B. Lawrence, R. S. Artz, B. T. Aulenbach, R. P. Hooper, D. R. Keeney, and G. J. Stensland. Flux and Source of Nutrients in the Mississippi-Atchafalaya River Basin. Review, *White House Office of Science and Technology Policy, Committee on Environment and Natural Resources, Hypoxia Work Group*, May 1999, pp. 13-37, 2000.
- Hatch, U., S. Jagtap, J. Jones, and M. Lamb. Potential Effects of Climate Change on Agricultural Water Use. *Journal of American Water Resources Association*, 35(6), 1551-1562. 1999.

- Keim, B. D., G. E. Faiers, R. A. Muller, J. M. Grymes, and R. V. Rohli. Long-Term Trends of Precipitation and Runoff in Louisiana. USA, *International Journal of Climatology*, 15, 531- 541, 1995.
- Lins, H. F., and J. R. Slack. Streamflow Trends in the United States. *Geophysical Research Letters*, 26(2), 227-230. 1999.
- Mearns, L. O., F. Giorgio, L. McDaniel, and C. Shields. Analysis of Daily Variability of Precipitation in a Nested Regional Climate Model: Comparison with Observations and Doubled CO 2 Results. *Global Planetary Change* 10, 55-78. 1995.
- Meyer, J. L.. Seasonal Patterns of Water Quality in Blackwater Rivers of the Coastal Plain, Southeastern United States. Water Quality in North American River Systems, edited by C. D. Becker and D. A. Neitzel, Battelle Press, Columbus, Ohio, pp. 249-276. 1992.
- Trenberth, K. E.. Conceptual Framework for Changes of Extreme of the Hydrological Cycle with Climate Change, *Climatic Change*, 42, 327-339. 1999.

Midwest Region – Hydro.

- Angel, J.R., and F.A. Huff, Changes in Heavy Rainfall in Midwestern United States. *J. Water Resources Planning. Management*, 123, 246-250. 1997.
- Chao, P.. Great Lakes Water Resources: Climate Change Impact Analysis with Transient GCM Scenarios. *Journal of American Water Resources Association*, 35, 1499-1507. 1999.
- Groisman, P. Ya., et al.. Changes in the Probability of Heavy Precipitation: Important Indicators of Climatic Change. *Climate Change*, 42, 243-283. 1999.
- Groisman, P. Ya., R. W. Knight, T. R. Karl. Relations Between Changes of Heavy Precipitation and Streamflow in the United States. *in press, Bulletin. American Meteorological Society*. 2000.
- Karl, T. R., and R. W. Knight. Secular Trends of Precipitation Amount, Frequency, and Intensity in the USA. *Bulletin. American Meteorological Society*, 79, 231-241. 1998.
- Olsen, J., J. Stedinger, N. Matalas, and E. Stakhiv. Climate Variability and Flood Frequency Estimation for the Upper Mississippi and Lower Missouri Rivers. *Journal of American Water Resources Association*, 35, 1509-1523. 1999.
- Quinn, F.H., B. M. Lofgren, A. H. Clites, R. A. Assel, A. Eberhardt, and T. Hunter. Great Lakes Water Resources Sector Report. *Great Lakes Environmental Research Laboratory, Ann Arbor, Michigan*, 6 pp.. 1999.
- Stefan, H.G., M. Hondzo, and X. Fang. Lake Water Quality Modeling for Projected Future Climate Scenarios. *Journal of Environmental Quality*, 22, 417-431. 1993.

Great Plains Region – Hydro.

- Karl et al.. Trends in Average Annual Temperature and Average Precipitation Over the 1895 to 1995 Period. *Data are the US Historical Climatology Network stations averaged in each of the 344 Climate Divisions. Analysis prepared for National Assessment Synthesis Team.* 1999.
- Kunkel, K., K. Andsager, and D. R. Easterling. Long-Term Trends in Extreme Precipitation Events Over the Conterminous United States and Canada. *Journal of Climate*, 12, 2515-2527. 1999.
- Miller, K.. Climate Variability, Climate Change, and Western Water. *Report to the Western Water Policy Review Advisory Commission, National Technical Information Service, Springfield, Virginia.* 1997. (<http://www.den.doi.gov/wwprac/reports/west.htm>)
- Ojima, D. S., L. Garcia, E. Eigaali, K. Miller, T. G. F. Kittel, and J. Lockett. Potential Climate Change Impacts on Water Resources in the Great Plains. *Journal of the American Water Resources Association*, 35, 1443-1454. 1999.
- Wilhite, D.. Improving Drought Management in the West. *Report to the Western Water Policy Review Advisory Commission, National Technical Information Service, Springfield, Virginia.* 1997. (<http://www.den.doi.gov/wwprac/reports/adrought.htm>)

West Region – Hydro.

- Dettinger, M. D., and D. R. Cayan. Large-Scale Atmospheric Forcing of Recent Trends Toward Early Snowmelt Runoff in California. *Journal of Climate*, 8, 606-623, 1995.
- Gleick, P. H., and E. L. Chalecki. The Impacts of Climate Changes for Water Resources of the Colorado and Sacramento-San Joaquin River Basins. *Journal of the American Water Resources Association*, 35(6). 1429-1441. 1999.
- Gleick, P.. Regional Hydrologic Consequences of Increases in Atmospheric CO₂ and Other Trace Gases, *Climate Change*, 10, 137-161. 1987.
- Hay, L. E., R. L. Wilby, and G. H. Leavesley. A Comparison of Delta Change and Downscaled GCM Scenarios for Three Mountainous Basins in the United States, *Journal of the American Water Resources Association*, 36(2). 2000.
- Hurd, B. H., N. Leary, R. Jones, and J. B. Smith. Relative Regional Vulnerability of Water Resources to Climate Change. *Journal of the American Water Resources Association*, 35(6), 1399-1410. 1999a.
- Jeton, A. E., M. D. Dettinger, and J. L. Smith. Potential Effects of Climate Change on Streamflow, Eastern and Western Slopes of the Sierra Nevada, California, and Nevada. *Water-Resources Investigations Report 95-4260, US Geological Survey, Sacramento, California.* 1996.

- Karl, T. R., and R. W. Knight. Secular Trends of Precipitation Amount, Frequency, and Intensity in the United States. *Bulletin of the American Meteorological Society*, 79, 231- 241. 1998.
- Lettenmaier, D. P., and D. P. Sheer. Climatic Sensitivity of California Water Resources. *Journal of Water Resources Planning and Management*, 117, 108-125. 1991.
- Miller, N. L., J. Kim, and M. D. Dettinger. California Stream Flow Evaluation Based on a Dynamically Downscaled Eight Year Hindcast, Observations, and Physically Based Hydrologic Models, *Eos, Transactions, AGU*, 80, F406. 1999b.
- Miller, N. L., J. Kim, and M. D. Dettinger. Climate Change Sensitivity Study for Two California River Basins. *U.S. Department of Energy Workshop on the Climate Change Prediction Program, Sponsored by the U.S. Department of Energy, Bethesda, Maryland, March 27-29, 2000.*
- Miller, N. L., J. Kim, R. K. Hartman, and J. Farrara. Downscaled Climate and Streamflow Study of the Southwestern United States, *Journal of the American Water Resources Association*, 35(6), 1525-1537. 1999a.
- Soil Moisture [Changes Projected by GCMs], *National Center for Atmospheric Research*. August 31, 1999. (<http://www.cgd.ucar.edu/naco/gcm/sm.html>)
- Wolock, D. M., and G. J. McCabe. Simulated Effects of Climate Change on Mean Annual Runoff in the Conterminous United States, *Journal of the American Water Resources Association*, 35(6), 1341-1350. 1999.

Pacific Northwest Region – Hydro.

- Graumlich, L. J., Precipitation Variation in the Pacific Northwest (1675-1975) as Reconstructed from Tree Rings. *Annals of the Association of American Geographers*, 77, 19-29, 1987.
- Harr, R. D., Water Flux in Soil and Subsoil in a Steep Forested Slope. *Journal of Hydrology* (33), 37-58, 1977.
- Jones, J. A., and G. E. Grant. Peak Flow Responses to Clear-Cutting and Roads in Small and Large Basins, Western Cascades, Oregon. *Water Resources Research*, 32, 959-974, 1996.
- Jones, J. A., and G. E. Grant. Hydrologic Processes and Peak Discharge Response to Forest Harvest, Regrowth, and Roads in Ten Small Experimental Basins, Western Cascades, Oregon, *Water Resources Research*, in review, 2000.
- Matthews, D. A., and T. Hovland. Nested Model Simulations of Regional Orographic Precipitation. *Global Climate Change Response Program Report, Bureau of Reclamation, Denver, Colorado*, 61 pp., 1997.
- Regional Assessment. *Journal of American Water Resources Association*, in review, 2000.
- Nijssen, B., D. P. Lettenmaier, X. Liang, S. W. Wetzel, and E. F. Wood. Streamflow Simulation for Continental-Scale River Basins. *Journal of Water Resources Research*, 33, 4, pp 711ff, 1997.

- Perkins, R.. Climatic and Physiographic Controls on Peakflow Generation in the Western Cascades, Oregon. Ph.D. dissertation, Oregon State University, Corvallis, Oregon, 1997.
- Swetnam, T. W., and J. L. Betancourt. Fire-Southern Oscillation Relations in the Southwestern United States, *Science*, 249, 1017-1020, 1990.

Alaska – Hydro.

- Clair T. A., J. Ehrman, and K. Higuchi. Changes to the Runoff of Canadian Ecozones Under a Doubled CO₂ Atmosphere. *Canadian Journal of Fisheries and Aquatic Sciences*, 55(11) 2464- 2477, 1998.
- Groisman, P.Y., and D. A. Easterling. Variability and Trends of Precipitation and Snowfall Over the United States and Canada. *Journal of Climate*, 7, 184-205, 1994.
- Hagemann, S., and L. Dümenil. A Parameterization of the Lateral Waterflow for the Global Scale. *Climate Dynamics*, 14, 17-31, 1998.
- Kerr, J. A.. Future Water Levels and Flows for Great Slave and Great Bear Lakes, Mackenzie River, and Mackenzie Delta. *Mackenzie Basin Impacts Study (MBIS), Final Report*, edited by S. J. Cohen, Environment Canada, Ottawa, 1997.
- Lamke, R. D.. Alaska Surface-Water Resource. *National Water Summary 1985, Hydrologic events and surface-water resources: US Geological Water-Supply Paper 2300*, D. W. Moody, E. B. Chase, and D. A. Aronson, (Compilers), pp. 137-144, 1986.
- Lammers, R. B., A. I. Shiklomanov, C. J. Vorosmarty, B. M. Fekete, and B. J. Peterson. Assessment of Contemporary Arctic River Runoff Based on Observational Discharge Records. *Journal of Geophysical Research- Atmospheres*, in press, 2000.
- Rouse, W. R., et al.. Effects of Climate Change on the Freshwaters of Arctic and Sub-Arctic North America. *Hydrological Processes*, 11(8), 873-902 (June 30), 1997.
- Royer, T. C.. Coastal Freshwater Discharge in the Northeast Pacific. *Journal of Geophysical Research*, 87, 2017-2021, 1982.
- Shiklomanov, I. A.. On the Effect of Anthropogenic Change in the Global Climate on River Runoff in the Yenisei Basin. *Runoff computations for water projects*, edited by A. V. Rozhdestvensky, International Hydrological Program, IHP-V, Technical Documents in Hydrology No. 9, UNESCO, Paris, pp. 113-199, 1997.
- Shiklomanov, I. A., A. I. Shiklomanov, R. B.Lammers, B. J.Peterson, and C. J.Vorosmarty. The Dynamics of River Water Inflow to the Arctic Ocean. *The Freshwater Budget of the Arctic Ocean*, edited by E. L. Lewis, E. P.Jones, P. Lemke, T. D. Prowse, P. Wadhamns, Kluwer Academic Publishers, Dordrecht, in press, 2000.
- Van Blarcum, S. C., J. R. Miller, and G. L. Russell. High-Latitude River Runoff in a Doubled CO₂ Climate. *Climatic Change*, 30(1), 7-26, 1995.
- Walsh, J. E., V. Kattsov, D. Portis, and V. Meleshko. Arctic Precipitation and Evaporation: Model Results and Observational Estimates. *Journal of Climate*, 11, 72-87, 1998.

US Affiliated Islands – Hydro.

- Covich, A. P., T. A. Crowl, S. L. Johnson, and F. N. Scatena. Drought Effects on Pool Morphology and Neotropical Stream Benthos. *Proceedings, Third International Symposium on Tropical Hydrology and Water Resources, San Juan, Puerto Rico, July 13-17, 1998, edited by R.I. Segarra-Garcia, American Water Resources Association, Middleburg, VA. 1998.*
- Larsen, M. C.. Drought, Rainfall, Streamflow, and Water Resources During the 1990s in Puerto Rico. *Physical Geography*, in press, 2000.
- Larsen, M. C., and I. M. Concepcion. Water Budgets of Forested and Agriculturally Developed Watersheds in Puerto Rico. *Proceedings, Third International Symposium on Tropical Hydrology and Water Resources, San Juan, Puerto Rico, July 13-17, 1998, edited by R.I. Segarra-Garcia, American Water Resources Association, Middleburg, VA, 199-204, 1998.*
- Meehl, G. A.. Vulnerability of Fresh Water Region. *Journal of Water, Air, and Soil Pollution*, 92, 203-213, 1996.
- USGS Hawaii State Fact Sheet. *US Geological Survey (USGS)*, 1996.
(<http://water.usgs.gov/pubs/FS/FS-011-96/>)
- USGS Hawaii Fact Sheet. *US Geological Survey (USGS)*, 1999a.
(<http://water.usgs.gov/pubs/FS/FS-012-99/>)
- USGS Fact Sheet 040-99: Puerto Rico. *US Geological Survey (USGS)*, 1999b.
(<http://water.usgs.gov/pubs/FS/FS-040-99/>).

Research Sectors of the Report

Agriculture Sector – Hydro.

- Strzepek, K. M., D. C. Major, C. Rosenzweig, A. Iglesias, D. N. Yates, A. Holt, and D. Hillel. New Methods of Modeling Water Availability for Agriculture Under Climate Change: The US Cornbelt. *Journal of the American Water Resources Association*, 35, 1639-1655, 1999.

Water Sector – Hydro.

- Anonymous. 1995 Irrigation Survey Reflects Steady Growth. *Irrigation Journal, Arlington Heights, IL*, 1996.
- Brown, T. C.. Past and Future Fresh Water Use in the United States. *General Technical Report RMRS-GTR-39, US Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fort Collins, Colorado*, 1999.

- Chalecki, E. L., and P. H. Gleick. A Framework of Ordered Climate Effects on Water Resources: A Comprehensive Bibliography. *Journal of the American Water Resources Association*, 35(6), pp. 1657-1665, 1999. URL: www.pacinst.org/CCBib.html
- Climate Change: Impacts on Water Resources. *US Department of the Interior*, 15 pp., June 30, 1997.
- Climate Change and Water Resources. *Committee report of the AWWA Public Advisory Forum, Journal of the American Water Works Association*, 89(11), 107-110, 1997.
- Draft Report of the Water Sector. *US National Assessment*, 2000.
<http://www.nacc.usgcrp.gov/sectors/water/draft-report/full-report.html>
- Felzer, B., and P. Heard. Precipitation Differences Amongst GCMs Used for the US National Assessment. *Journal of the American Water Resources Association*, 35(6), pp. 1327-1340.
- Frederick, K. D., and P. H. Gleick. Water and Global Climate Change: Potential Impacts on US Water Resources. *Pew Center on Global Climate Change, Washington, DC*, 1999.
- Gleick, P. H., and B. Chalecki. The Impacts of Climatic Changes for Water Resources of the Colorado and Sacramento-San Joaquin River Basins. *Journal of the American Water Resources Association*, 35(6), 1429-1441, 1999.
- Groisman, P. Ya.. Trends in the Precipitation and Snow Cover Records Across the United States. *Proceedings of the AWRA Specialty Conference on Potential Consequences of Climate Variability and Change to Water Resources of the United States, American Water Resources Association, Herndon, VA*, pp. 89-92, 1999.
- Groisman, P. Ya., R. W. Knight, and T. R. Karl. Mean Precipitation and High Streamflow in the Contiguous United States: Trends in the Twentieth Century. *Bulletin of the American Meteorology Society*, in press, 2000.
- Jacobs, K. L.. Water Sector Summary Comments for Inclusion in the Synthesis Report. *AWRA Specialty Conference on Potential Consequences of Climate Variability and Change to Water Resources of the United States, Atlanta, GA*, May 10-12, 1999.
- Karl, T. R., and R. W. Knight. Secular Trends of Precipitation Amount, Frequency, and Intensity in the United States. *Bulletin of the American Meteorological Society*, 79(2), pp. 231-241, 1998.
- Karl, T. R., and R. W. Riebsame. The Impact of Decadal Fluctuations in Mean Precipitation and Temperature on Runoff: A Sensitivity Study Over the United States. *Climatic Change*, 15, 423- 447, 1989.
- Lettenmaier, D. P., E. F. Wood, and J. R. Wallis. Hydro-Climatological Trends in the Continental United States 1948-1988. *Journal of Climate*, 7, pp. 586-607, 1994.
- Leung, R. L., and M. S. Wigmosta. Potential Climate Change Impacts on Mountain Water Resources in the Pacific Northwest. *Journal of the American Water Resources Association*, 35(6), pp. 1463-1473, 1999.

- Lins, H. F., and J. R. Michaels. Increasing US Streamflow Linked to Greenhouse Forcing *Eos Transactions*, 75, pp. 281-283, 1994.
- Lins, H. F., and J. R. Slack. Streamflow Trends in the United States. *Geophysical Research Letters*, 26(2), pp. 227-230, 1999.
- Matalas, N. C.. Note on the Assumption of Hydrologic Stationarity. *Water Resources Update No. 112, The Universities Council on Water Resources, Carbondale, IL*, pp. 64-72, 1988.
- Mekis, E., and W. Hogg. Rehabilitation and Analysis of Canadian Daily Precipitation Time Series. *Conference on Applied Climatology*, Reno, Nevada, pp. 20-24, October 1997.
- Miller, N. L., J. Kim, and R. K. Hartman. Downscaled Climate and Streamflow Study of the Southwestern United States. *Journal of the American Water Resources Association*, 35(6), pp.1525-1538, 1999.
- Mulholland, P. J., and M. J. Sale. Impacts of Climate Change on Water Resources: Findings of the IPCC Regional Assessment of Vulnerability for North America. *Water Resources Update No. 112, The Universities Council on Water Resources, Carbondale, IL*, pp. 10-16, 1998.
- National Assessment of Water Quality. *US Department of the Interior, Geological Survey*, (<http://www.water.usgs.gov/lookup/get?nawqa.html>)
- National Water Quality Inventory: 1996 Report to Congress. *US Environmental Protection Agency, EPA841-R-97-008, Washington, DC*, 1998.
- National Water Summary 1983: Hydrologic Events and Issues. *US Department of the Interior, Geological Survey, Water Supply Paper 2250*, 1984.
- Squillace, P. J., M. J. Moran, W. W. Lapham, C. V. Price, R. M. Clawges, and J. S. Zagorski. Volatile Organic Compounds in Untreated Ambient Groundwater of the United States, 1985- 1995, *Environmental Science and Technology*, pp. 4176-4187, December 1999.
- US Water Resources Council. The Nation's Water Resources 1975-2000, Second National Water Assessment. *US Environmental Protection Agency, US Government Printing Office, Washington, DC*, 1978.
- Wang, B., D. C. Trabant, G. Weller, and P. Anderson. Effect of Climate Variability and Change on the Water Resources of Alaska. *Proceedings of the AWRA Specialty Conference on Potential Consequences of Climate Variability and Change to Water Resources of the United States, American Water Resources Association, Herndon, VA*, pp. 273-276, 1999.
- Wolock, D. M., and G. J. McCabe. Explaining Spatial Variability in Mean Annual Runoff in the Conterminous United States. *Climate Research*, 11, 149-159, 1999a.

Wolock, D. M., and G. J. McCabe. Simulated Effects of Climate Change on Mean and Annual Runoff in the Conterminous United States. *Proceedings of the AWRA Specialty Conference on Potential Consequences of Climate Variability and Change to Water Resources of the United States*, American Water Resources Association, Herndon, VA, pp. 161-164, 1999b.

Health Sector – Hydro.

Fowler, A. M., and K. J. Hennessey. Potential Impacts of Global Warming on the Frequency and Magnitude of Heavy Precipitation. *Natural Hazards*, 11, 283-303, 1995.

Mearns, L. O., F. Giorgi, L. McDaniel, and C. Shields. Analysis of Daily Variability of Precipitation in a Nested Regional Climate Model: Comparison with Observations and Doubled CO₂ Results. *Global and Planetary Change*, 10, 55-78, 1995.

Trenberth, K. E.. Conceptual Framework for Changes of Extremes of the Hydrologic Cycle with Climate Change. *Climatic Change*, 42, 327-39, 1999.

Coastal Areas and Marine Resources Sector – Hydro.

National Water Quality Inventory: 1996 Report to Congress. *Environmental Protection Agency (EPA)*, 1996. URL: <http://www.epa.gov/305b/>

Wolock, D.M. and G.J. McCabe. Simulated Effects of Climate Change on Mean Annual Runoff in the Conterminous United States. *Journal of the American Water Resources Association* 35: 1341-1350, 1999.

Forest Sector – Hydro.

Eagleson, P. S.. Climate, Soil, and Vegetation 1. Introduction to Water Balance Dynamics. *Water Resources Research*, 14, 705-712, 1978.

Galloway, J. N.. Acid Deposition: Perspectives in Time and Space. *Water, Air, and Soil Pollution*, 85, 15-24, 1995.

Kergoat, L.. A Model for Hydrological Equilibrium of Leaf Area Index on a Global Scale. *Journal of Hydrology*, 213, 268-286, 1998.

Musselman, R. C., L. Hudnell, M. W. Williams, and R. A. Sommerfeld. Water Chemistry of Rocky Mountain Front Range Aquatic Ecosystems. *Research paper RM-RP-325, USDA Forest Service Rocky Mountain Forest and Range Experiment Station, Fort Collins, Colorado*, 1996.

Wet Deposition of the United States. 1996. *National Atmospheric Deposition Program Office, Champaign, Illinois*, 10 pp., 1997.

Land Surface

Scenarios Used for the Report

Scenarios for Climate Variability and Change – LandS.

Arrhenius, S.. On the Influence of Carbonic Acid in the Air Upon the Temperature of the Ground. *Philosophical Magazine*, 41, 237. 1896.

Report's Regional Elements of the U.S.

Northeast Region – LandS.

Cronon, W.. Changes in the Land. *Hill and Wang, New York*, 241 pp. 1983.

Midwest Region – LandS.

Lew, A. A.. The Midwest: The Nation's Heartland. *Geography USA: A Virtual Textbook*. 1998 (<http://www/for.nau.edu/~alew/midwest7.html>).

Great Plains Region – LandS.

State of the Land for the Northern Plains Region. *USDA NRCS, Natural Resource Conservation Service, Northern Plains Regional Office, Lincoln, Nebraska*. 1996.

West Region – LandS.

Riebsame, W. E. (Ed.). Atlas of the New West. *W.W. Norton & Company, New York*. 1997.

Seasonal Land Cover Regions: scale: 1:7,500,000," Map. *US Geological Survey, Reston, Virginia*. 1993.

Pacific Northwest Region – LandS.

Gerstel, W. J., M. J. Brunengo, W. S. Lingley, Jr., R. L. Logan, H. Shipman, and T. J. Walsh. Puget Sound Bluffs: The Where, Why, and When of Landslides Following the Holiday 1996-97 Storms. *Washington Geology*, 25(1), 17-31, 1997.

Jackson, P. L., and A. J. Kimmerling, (Eds.). Atlas of the Pacific Northwest, 8th Edition. *Oregon State University Press, Corvallis, Oregon*, 1993.

Native Peoples and Homelands – LandS.

Riebsame, W., J. Robb, and D. Thoebald (editors). Atlas of the New West: Portrait of a Changing Region. *W. W. Norton & Co., New York*, 192 pp., 1997.

Research Sectors of the Report

Coastal Areas and Marine Resources Sector – LandS.

Dolan, R., F. Anders, and S. Kimball. Coastal Erosion and Accretion in US. *Geological Survey National Atlas, Department of Interior, US Geological Survey, Reston, Virginia*, 1985.

Griggs, G. B., and K. M. Brown. Erosion and Shoreline Damage Along the Central California Coast: A Comparison Between the 1997-1998 and 1982-1983 ENSO Winters. *Shore and Beach*, 66(3), 18-23, 1999.

Komar, P. D.. The 1997-1998 El Niño and Erosion on the Oregon Coast. *Shore and Beach*, 66(3), 33-41, 1999.

Forest Sector - LandS

Dale, V. H.. The Relationship Between Land-Use Change and Climate Change. *Ecological Applications*, 7, 753-769, 1997.

Watson, R. T., I. R. Nobel, B. Bolin, N. H. Ravindranath, D. J. Verardo, and D. J. Dokken (Eds.). IPCC, 2000: Land Use, Land-Use Change, and Forestry. A Special Report of the Intergovernmental Panel on Climate Change. *Cambridge University Press, Cambridge, United Kingdom*, 2000.

Oceans

Scenarios Used for the Report

Scenarios for Climate Variability and Change – Ocn.

Gregory, J. M., and J. Oerlemans. Simulated Future Sea-Level Rise Due to Glacier Melt Based on Regionally and Seasonally Resolved Temperature Changes. *Nature*, 391, 474-476. 1998.

Knutson, T. R., S. Manabe, and D. Gu. Simulated ENSO in a Global Coupled Ocean-Atmosphere Model: Multidecadal Amplitude Modulation and CO₂ Sensitivity. *Journal of Climate*, 10, 138-161. 1997.

Lau, K. M., and H. Weng. Interannual, Decadal-to-Interdecadal and Global Warming Signals in Sea Surface Temperature During 1955-1997. *Journal of Climate*, 12, 1257-1267. 1999.

Leatherman, S. P., K. Zhang, and B. C. Douglas. Sea Level Rise Shown to Drive Coastal Erosion. *Transactions of the American Geophysical Union, EOS, 81, 55-57, 2000 (also see responses and reply in EOS, 81, 436-437 and 439-441, 2000).*

Timmermann, A., Oberhuber, J., Bacher, A., Esch, M., Latif, M., and E. Roeckner. Increased El Nino Frequency in a Climate Model Forced by Future Greenhouse Warming. *Nature, 398, 694-697. 1999.*

Report's Regional Elements of the U.S.

Northeast Region – Ocn.

Ebersole, B. A.. Atlantic Coast Water-Level Climate. *WIS Report 7, US Army Corps of Engineers, Washington, DC. 1982.*

Gornitz, V.. Regional Sea-Level Variations in Eastern North America: A Geological Perspective. *Transactions. American Geophysical Union, 80, (17) S85. 1999.*

Gornitz, V., and S. Lebedeff. Global Sea-Level Changes During the Past Century. *Sea-Level Rise and Coastal Subsidence, edited by D. Nummedal, O. Pilkey, and J. Howard, Kluwer Academic Publishers, Dordrecht, Netherlands, 357-364. 1987.*

Najjar, R. G., et al.. The Potential Impacts of Climate Change on the Mid-Atlantic Coastal Region. *Climate Research, 14, 219-233. 2000.*

Timmermann, A., J. Oberhuber, A. Bacher, M. Esch, M. Latif, and E. Roeckner. Increased El Niño Frequency in a Climate Model Forced by Future Greenhouse Warming. *Nature 398: 694-696. 1999*

Valverde, H. R., A. C. Trembanis, and O. H. Pilkey. Summary of Beach Nourishment Episodes on the U.S. East Coast Barrier Islands. *Journal of Coastal Research, 15, 1100-1118. 1999.*

Southeast Region – Ocn.

Rabalais, N. N., R. E. Turner, D. Justic', Q. Dortch, and W. J. Wiseman, Characterization of Hypoxia. *Topic #1, Gulf of Mexico Hypoxia Assessment, NOAA Coastal Program Decision Analysis Series, National Oceanic and Atmospheric Administration, Coastal Ocean Office, Silver Spring, Maryland, 144 pp. plus 3 appendices. 1999.*

Timmermann, A., J. Oberhuber, A. Bacher, M. Esch, M. Latif, and E. Roeckner. Increased El Niño Frequency in a Climate Model Forced by Future Greenhouse Warming. *Nature, 398, 694-697. 1999.*

Pacific Northwest Region – Ocn.

Beamish, R. J., and D. R. Bouillon. Pacific Salmon Production Trends in Relation to Climate. *Canadian Journal of Fisheries and Aquatic Sciences, 50, 1002-1016, 1993.*

- Bisbal, G. A., and W. E. McConnaha. Consideration of Ocean Conditions in the Management of Salmon. *Canadian Journal of Fisheries and Aquatic Sciences*, 55, 2178-2186, 1998.
- Canning, D. J., and H. Shipman, Coastal Erosion Management Studies in Puget Sound, Washington: Volume I, Executive Summary, report 94-94. *Washington Department of Ecology, Olympia, Washington*, 1994.
- Craig, D., Preliminary Assessment of Sea Level Rise in Olympia, Washington: Technical and Policy Implications. *City of Olympia Public Works Department Policy and Program Development Division, Olympia, Washington*, 1993.
- Field, J., and M. Hershman. Assessing Coastal Zone Sensitivity and Vulnerability to Regional Climate Variability and Change in the Pacific Northwest. *Climate Impacts Group, University of Washington, Seattle, Washington*, 1997.
- Hare, S. J., N. J. Mantua, and R. C. Francis. Inverse Production Regimes: Alaskan and West Coast Pacific Salmon. *Fisheries*, 24, 6-14, 1999.
- Komar, P. D., and D. B. Enfield. Short-Term Sea-Level Changes and Coastal Erosion. *Sea-level Fluctuations and Coastal Evolution, Special Publication 41*, edited by D. Nummedal, O. Pilkey, and J. D. Howard, pp. 17-27, *Society of Economic Paleontologists and Mineralogists*, 1987.
- Mantua, N. J., S. R. Hare, Y. Zhang, J. M. Wallace, and R. C. Francis. A Pacific Interdecadal Climate Oscillation with Impacts on Salmon Production. *Bulletin of the American Meteorological Society*, 78, 1069—1079, 1997.
- Miller, A. J., D. R. Cayan, and W. B. White. A Westward-Intensified Decadal Change in the North Pacific Thermocline and Gyre-Scale Circulation. *Journal of Climate*, 11, 3112-3127, 1998.
- Myers, J. M., et al.. Status Review of Chinook Salmon from Washington, Idaho, Oregon, and California. *NOAA Tech. Memo. NMFS-NWFSC-35*, 1998.
- Pacific Salmon: Proceedings of the Workshop. *US Department of Commerce, NOAA Technical Memo., NMFS-NWFSC-29*, 1997.
- Park, R. A., J. K. Lee, and D. J. Canning. Potential Effects of Sea-Level Rise on Puget Sound Wetlands. *Geocarto International*, 99-110, 1993.
- Pearcy, W. G., K. Y. Aydin, and R. D. Brodeur. What is the Carrying Capacity of the North Pacific Ocean for Salmonids?. *Pisces Press*, 7, 2, 17-22, 1999.
- Shipman, H., Vertical Land Movements in Coastal Washington: Implications for Relative Sea Level Changes. *Washington Department of Ecology, Olympia, Washington*, 1989.
- Trenberth, K. E.. The Definition of El Niño. *Bulletin of the American Meteorological Society*, 78, 2771-2777, 1997.

- Walker, R. V., K. W. Myers, N. D. Davis, K.Y. Aydin, K. D. Friddland, H. R. Carlson, G. W. Boehlert, S. Urawa, Y. Ueno, and G. Anma. Diurnal Variation in the Thermal Environment Experienced by Salmonids in the North Pacific as Indicated by Data Storage Tags. *Fisheries Oceanography*, in review, 2000.
- Welch, D.W., Y. Ishida, and K. Nagasawa. Thermal Limits and Ocean Migrations of Sockeye Salmon (*Oncorhynchus nerka*): Long-Term Consequences of Global Warming. *Canadian Journal of Fisheries and Aquatic Sciences*, 55, 937-948, 1998.
- Welch, D. W., Y. Ishida, and K. Nagasawa. Thermal Limits and Ocean Migrations of Sockeye Salmon (*Oncorhynchus nerka*): Long-Term Consequences of Global Warming. *Canadian Journal of Fisheries and Aquatic Sciences*, 55, 937-948, 1998.

Alaska – Ocn.

- Kruse, G. H.. Salmon Run Failures in 1997-1998: A Link to Anomalous Ocean Conditions?. *Alaska Fishery Research Bulletin*, 5(1), 55-63, 1998.
- Broecker, W. S., G. Bond, and M. A. Klas. A Salt Oscillator in the Glacial Atlantic? 1. The Concept. *Paleoceanography*, 5, 469-477, 1990.
- Brown, J., and S. Solomon. Arctic Coastal Dynamics: Report of an International Workshop. *Woods Hole, Massachusetts, A geological survey of Canada open file report*, in press, 2000. (<http://www.awi-potsdam.de/www-pot/geo/acd.html>)
- Buch, E., S. A. Horsted, and H. Hovgard. Fluctuations in the Occurrence of Cod in Greenland Waters and their Possible Causes. *ICES Marine Science Symposium*, 198, 158-174, 1994.
- FOCI International Workshop on Recent Conditions in the Bering Sea. *National Oceanic and Atmospheric Administration (NOAA)-Pacific Marine Environmental Laboratory, Seattle, Washington*, 1999.
- Forbes, D. L., and R. B. Taylor. Ice in the Shore Zone and the Geomorphology of Cold Coasts. *Progress in Physical Geography*, 18, 59-89, 1994.
- Huppert, D.. Managing the Groundfish Fisheries of Alaska: History and Prospects. *Reviews in Aquatic Sciences*. 4(4), 339-373. 1991.
- Mantua, N. J., S. R. Hare, Y. Zhang, J. M. Wallace, and R. C. Francis. A Pacific Interdecadal Climate Oscillation with Impacts on Salmon Production. *Bulletin of the American Meteorological Society*, 78, 1069—1079, 1997.
- Proshutinsky, A. Y., and M. A. Johnson. Two Circulation Regimes of the Wind-Driven Arctic Ocean. *Journal of Geophysical Research*, 102, No. C6, 12493-12514, 1997.
- Royer, T. C.. Baroclinic Transport in the Gulf of Alaska: A Freshwater Driven Coastal Current. *Journal of Marine Research*, 39, 251-266, 1981.
- Royer, T. C.. High-Latitude Oceanic Variability Associated with the 18.6-year Nodal Tide. *Journal of Geophysical Research – Oceans*, 98 (C3), 4639-4644 1993.

- Semiletov, I. et al.. The Dispersion of Siberian River Flows into Coastal Waters: Hydrological and Hydrochemical Aspects. *The Freshwater Budget of the Arctic Ocean, NATO Arctic workshop, 25 April - 1 May 1998, Tallinn, Estonia, edited by E. L. Lewis, 1999.*
- Shaw, J., R. B. Taylor, S. Solomon, H. A. Christian, and D. L. Forbes. Potential Impacts of Global Sea-Level Rise on Canadian Coasts. *The Canadian Geographer*, 42, 365-379, 1998.
- Solomon, S. M., and R. Covill. Impacts of the September 1993 Storm on the Coastline at Four Sites Along the Canadian Beaufort Sea Coast. *Proceedings of the 1995 Canadian Coastal Conference, Dartmouth Nova Scotia*, 2, 779-795, 1995.
- Witherell, D.. Status and Trends of Principal Groundfish and Shellfish Stocks in the Alaska EEZ. *North Pacific Fishery Management Council, Anchorage Alaska*, February 26, 1999.

US Affiliated Islands – Ocn.

- Hamnett, M. P., and C. L. Anderson. Impact of ENSO Events on Tuna Fisheries in the US-Affiliated Pacific Islands. *Report of research supported by the Office of Global Programs, National Oceanic and Atmospheric Administration, Washington, D.C.*, October 1999.
- Low, L.-L., A. M. Shimada, S. L. Swartz, and M. P. Sissenwine. Marine Resources. Status and Trends of the Nation's Biological Resources, edited by M. J. Mac, P. A. Opler, C. E. Puckett Haecker, and P. D. Doran, pp. 775-866, US Geological Survey, Reston, Virginia, 1998.

Native Peoples and Homelands – Ocn.

- Hsieh, W. W., and W. G. Lee. A Numerical Model for the Variability of the Northeast Pacific Ocean. *Canadian Special Publication of Fisheries and Aquatic Sciences*, 108, 247-254, 1989.
- Mysak, L. A.. El Niño, Interannual Variability, and Fisheries in the Northeast Pacific Ocean. *Canadian Journal of Fisheries and Aquatic Sciences*, 43, 464-497, 1986.

Research Sectors of the Report

Water Sector – Ocn.

- Gornitz, V.. Sea-Level Rise: A Review of Recent Past and Near-Future Trends. *Earth Surface Processes and Landforms*, 20, pp. 7-20, 1995.

Health Sector – Ocn.

- Gower, J.F.R.. Detection and Mapping of Bright Plankton Blooms and River Plumes using AVHRR Imagery. *Third Thematic Conference, Remote Sensing for Marine and Coastal Environments, Seattle, Washington*, pp. 151-62, 1995.

Lipp, E. K., J. B. Rose, R. Vincent, R. Kurz, and C. Rodriguez-Palacios. Assessment of the Microbiological Water Quality in Charlotte Harbor, Florida. *Technical report to the Southwest Florida water management district, surface water improvement, and management plan, Tampa: Southwest Florida Water Management District*, 1999.

Motes, M.L., A. DePaola, D. W. Cook, J. E. Veazey, J. C. Hunsucker, W. E. Garthright, R. J. Blodgett, and S. J. Chirtel. Influence of Water Temperature and Salinity on *Vibrio Vulnificus* in Northern Gulf and Atlantic Coast Oysters (*Crassostrea Virginica*). *Applied Environmental Microbiology*, 64(4), 1459-65, 1998.

Coastal Areas and Marine Resources Sector – Ocn.

Alexander, C. E.. Classified Shellfish Growing Waters. *NOAA's state of the coast report, National Oceanic and Atmospheric Administration (NOAA), Silver Spring, Maryland*, 1998. URL: <http://state-of-coast.noaa.gov/topics/html/state.html>

Broecker, W. S., S. Sutherland, and T. H. Peng. A Possible 20th Century Slowdown of Southern Ocean Deep Water Formation. *Science*, 286, 1132-1135, 1999.

Broecker, W. S.. The Great Ocean Conveyor. *Oceanography*, 4(2), 79-89, 1991.

Cane, M. A., A. C. Clement, A. Kaplan, Y. Kushnir, D. Pozdnyakov, R. Seager, S. E. Zebiak, and R. Murtugudde. Twentieth-Century Sea Surface Temperature Trends. *Science*, 275, 957-960, 1997.

Gornitz, V. M.. Sea-Level Rise: A Review of Past and Near-Future Trends. *Earth Surface Processes and Landforms*, 20, 7-20, 1995.

Hargreaves, N. B., D. M. Ware, and G. A. McFarlane. Return of the Pacific Sardine (*Sardinops sagax*) to the British Columbia Coast in 1992. *Canadian Journal of Fisheries and Aquatic Sciences*, 51, 460-463, 1994.

Kaminsky, G. M., P. Ruggeiero, and G. Gelfenbaum. Monitoring Coastal Change in Southwest Washington and Northwest Oregon During the 1997-1998 El Niño. *Shore and Beach*, 66(3), 42-51, 1999.

Levitus, S., J. I. Antonov, T. P. Boyer, and C. Stephans. Warming of the World Ocean. *Science*, 287, 2225-2229, 2000.

Mantua, N. J., S. R. Hare, Y. Shang, J. M. Wallace, and R. C. Francis. A Pacific Interdecadal Climate Oscillation with Impacts on Salmon Production. *Bulletin of the American Meteorological Society*, 78, 1069-1079, 1997.

Pacific Sardine Resource Now Officially Recovered. *California Department of Fish and Game, press release*, January 15, 1999.

Pugh, D. T., and G. A. Maul. Coastal Sea Level Prediction for Climate Change. *Coastal and Estuarine Studies 56: Coastal Ocean Prediction*, edited by C.N.K. Mooers, American Geophysical Union, Washington D.C. pp. 377-404, 1999.

- Reed, D.J. The Response of Coastal Marshes to Sea-Level Rise: Survival of Submergence. *Earth Surface Processes and Landforms* 20:39-48. 1995.
- Schmittner, A., and T. F. Stocker. The Stability of the Thermohaline Circulation in Global Warming Experiments. *Journal of Climate*, 12, 1117-1134, 1999.
- Status of Fisheries of the United States, 1998: A Report to Congress. *National Marine Fisheries Service National Oceanic and Atmospheric Administration, Silver Spring, MD.* 88pp. 1998
- Strong, A. E., E. J. Kearns and K. K. Gjovig. Sea Surface Temperature Signals From Satellites: An Update. *Geophysical Research Letters*, 27(11), 1667-1670, 2000.
- Sustaining Marine Fisheries. National Research Council, National Academy Press, Washington, DC, 1999.
- Titus, J. G., and V. K. Narayanan. The Risk of Sea-Level Rise. *Climatic Change*, 33, 151-212, 1996.
- Year of the Ocean Discussion Papers. *National Oceanic and Atmospheric Administration (NOAA)*, 1998.

Historical Climate

Scenarios Used for the Report

Scenarios for Climate Variability and Change – Hist.

- Berger, A., M. F. Loutre, and J. L. Melice. The 100 kyr Period in the Astronomical Forcing. *Scientific Report 1999/6, Institut D'Astronomie et de Geophysique G. Lemaitre, Université Catholique de Louvain.* 1999.
- Berger, A., and M. F. Loutre. Insolation Values for the Climate of the Last 10 Million Years. *Quaternary Science Reviews*, 10, 297-317. 1991.
- Berger, A.. The Role of CO₂, Sea-Level and Vegetation During the Milankovitch Forced Glacial- Interglacial Cycles. *Geosphere-Biosphere Interactions and Climate*, edited by L. Bengtsson. 1999.
- Clark, P. U., R. B. Alley, and D. Pollard. Northern Hemisphere Ice-Sheet Influences on Global Climate Change. *Science*, 286, 1104-1111. 1999.
- COHMAP (Climates of the Holocene Mapping Project), Climatic Changes of the Last 18,000 years: Observations and Model Simulations. *Science*, 241, 1043-1052. 1988.
- Crowley, T. J.. Causes of Climate Change Over the Past 1000 Years. *Science*, 289, 270-277. 2000.

- Crowley, T. J., and G. R. North. Paleoclimatology. *Oxford University Press, New York*, 339 pp. 1991.
- Etheridge, M., L. P. Steele, R. L. Langenfelds, R. J. Francey, J.-M. Barnola, and V. I. Morgan. Historical CO₂ Records From the Law Dome DE08, DE08-2, and DSS Ice Cores. *Trends: A Compendium of Data on Global Change, Carbon Dioxide Information Analysis Center, Oak Ridge National Laboratory, US Department of Energy, Oak Ridge Tennessee*. 1998.
- Huang, S., H. N. Pollack, and P. Y. Shen, Temperature Trends Over the Past Five Centuries Reconstructed from Borehole Temperatures. *Nature*, 403, 756-758.
- Imbrie, J., et al.. On the Structure and Origin of Major Glaciation Cycles 1. Linear Responses to Milankovitch Forcing. *Paleoceanography*, 7, 701-738. 1992.
- Imbrie, J., et al. On the Structure and Origin of Major Glaciation Cycles 2. The 100,000 Year Cycle. *Paleoceanography*, 8, 699-735. 1993.
- Imbrie, J., A. McIntyre, and A. Mix. Oceanic Response to Orbital Forcing in the Late Quaternary: Observational and Experimental Strategies. *Climate and the Geosciences*, edited by A. Berger et al., *Kluwer Academic Publishers, Boston, Massachusetts*. pp. 121-164. 1989.
- Indermuhle, A., et al.. Holocene Carbon-Cycle Dynamics Based on CO₂ Trapped in Ice at Taylor Dome, Antarctica. *Nature*, 398, 121-126. 1999.
- Joussaume, S., et al.. Monsoon Changes for 6000 Years ago: Results of 18 Simulations from the Paleoclimate Modelling Intercomparison Project (PMIP). *Geophysical Research Letters*, 26, 859-862. 1999.
- Kutzbach, J. E., P. J. Guetter, P. J. Behling, and R. Selin. Simulated Climatic Changes: Results of the COHMAP Climate-Model Experiments. *Global Climates Since the Last Glacial Maximum*, edited by H. E. Wright, Jr., et al. *University of Minnesota Press, Minnesota*, pp. 24-93. 1993.
- Mann, M. E., R. S. Bradley, and M. K. Hughes. Northern Hemisphere Temperatures During the Past Millennium: Inferences, Uncertainties, and Limitations. *Geophysical Research Letters*, 26(6), 759-762. 1999.
- Neftel, A., H. Friedli, E. Moor, H. Löttscher, H. Oeschger, U. Siegenthaler, and B. Stauffer. Historical CO₂ Record from the Siple Station Ice Core. *Trends: A Compendium of Data on Global Change, Carbon Dioxide Information Analysis Center, Oak Ridge National Laboratory, US Department of Energy, Oak Ridge Tennessee*. 1994.
- Petit, J. R., et al.. Climate and Atmospheric History of the Past 420,000 Years from the Vostok Ice Core, Antarctica. *Nature*, 399, 429-436. 1999.
- Stahle, D. W., E. R. Cook, M. K. Cleaveland, M. D. Therrell, D. M. Meko, H. D. Grisino- Mayer, E. Watson, and B. H. Luckman. Tree-Ring Data Document 16th Century Megadrought.
- Thompson, D.J., The Seasons, Global Temperature, and Precession. *Science*, 399, 59-68. 1995.

Socioeconomic Context for Climate Impact Assessment – Hist.

Bryson, R. A., H. H. Lamb, and D. L. Donley. Drought and the Decline of Mycenae, *Antiquity*, 48, 46. 1974.

Report's Regional Elements of the U.S.

Northeast Region – Hist.

Kearney, M. S., and J. C. Stevenson. Island Land Loss and Marsh Vertical Accretion Rate Evidence for Historical Sea-Level Changes in Chesapeake Bay, *Journal of Coastal Research*, 7, 403- 415. 1991.

US Historical Climatology (<http://www.ncdc.noaa.gov/ol/climate/research/ushcn/daily.html>)

Pacific Northwest Region – Hist.

dell'Arciprete, P., D. L. Peterson, R. C. Francis, and N. Mantua Climate Reconstruction Through Tree Growth Indices. *Unpublished manuscript, available from the University of Washington Climate Impacts Group, Seattle, Washington*, 1998.

Miller, R. F., and P. E. Wigand. Holocene Changes in Semiarid Pinyon-Juniper Woodlands. *BioScience*, 44(7), 465-474, 1994.

Rocheftort, R. M., R. L. Little, A. Woodward, D. L. Peterson. Changes in Subalpine Tree Distribution in Western North America: A Review of Climate and Other Factors. *The Holocene*, 4, 89-100, 1994.

Alaska – Hist.

Foley, J. A., J. E. Kutzbach, M. T. Coe, S. Levis. Feedbacks Between Climate and Boreal Forests During the Holocene Epoch, *Nature*, 371(6492), 52-54 (September 1), 1994.

Overpeck, J., et al.. Arctic Environmental Change of the Last Four Centuries *Science*, 278, 1251-1256, 1997.

US Affiliated Islands – Hist.

Parkinson, R.W., R.D. de Laune, and J.R. White. Holocene Sea-Level Rise and the Fate of Mangrove Forests Within the Wider Caribbean Region. *Journal of Coastal Research*, 10, 1077- 1086, 1994.

Reading, A. J.. Caribbean Tropical Storm Activity Over the Past Four Centuries. *International Journal of Climatology*, 10, 365-376, 1990.

Steadman, D. A.. Prehistoric Extinctions of Pacific islands' Birds: Biodiversity Meets Zooarcheology. *Science*, 267, 1123-1131, 1995.

Research Sectors of the Study

Water Sector – Hist.

Woodhouse, C. A., and J. T. Overpeck. A Paleoclimatic Record of Drought for the Past 2,000 Years. Proceedings of the AWRA Specialty Conference on Potential Consequences of Climate Variability and Change to Water Resources of the United States, American Water Resources Association, Herndon, VA, pp. 59-64, 1999.

Health Sector – Hist.

Reiter, P.. From Shakespeare to Defoe: Malaria in England in the Little Ice Age. *Emerging Infectious Diseases*, 6, 1-11, 2000.

Forest Sector – Hist.

McIntosh, R. J., J. A. Tainter, and S. K. McIntosh, (Eds.). The Way the Wind Blows, Climate, History and Human Action. *Columbia University Press*, 2000.

Webb, T., III. Past Changes in Vegetation and Climate: Lessons for the Future. *Global Warming and Biological Diversity*, edited by R. L. Peters and T. E. Lovejoy, Yale University Press, New Haven, Connecticut, 59-75, 1992.

Solar Physics

Scenarios Used for the Report

Scenarios for Climate Variability and Change – Sol.

Hoyt, D. V., and K. H. Schatten. A Discussion of Plausible Solar Irradiance Variations: 1700-1992. *Journal of Geophysical Research*, 98, 18895-18906. 1993.

Lean, J., J. Beer, and R. S. Bradley. Reconstruction of Solar Irradiance Since 1620: Implications for Climate Change. *Geophysical Research Letters*, 22(23), 3195-3198. 1995.

Willson, R.C.. Total Solar Irradiance Trend During Solar Cycles 21 and 22. *Science*, 277, 1963-1965. 1997.

Report's Regional Element of the U.S.

Alaska – Sol.

Taalas, P., J. Damski, E. Kyro, M. Ginzburg, and G. Talamoni, The Effect of Stratospheric Ozone Variations on UV Radiation and on Tropospheric Ozone at High Latitudes, *Journal of Geophysical Research*, 102(D1), 1533-1543, 1997.

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